



COURSE SPECIFICATION

(2016 / 2017)

1- Basic Information:

Course title: Fish and Aquaculture Diseases, and Management (A,B)

Academic Year: 4th year *of B. V. Sc. Program*

Total teaching hours: 120 hrs

- Lectures: 60 hrs

- Practical: 60 hrs.

2- OVERALL AIMS OF THE COURSE:

- Achieve the basic principals for distinguishing the normal and diseased fish, through their clinical examination.
- Provide the students with the basic hygienic measures adopted in aquacultures for food fish or aquaria for ornamentals.
- Provide the students with an appropriate background on the most common diseases affecting fishes with their remedies or prevention and control.
- Acquaint the students with an appropriate professional attitudes, communications and problem solving skills

3- INTENDED LEARNING OUTCOMES (I. L. Os.):

3-A: KNOWLEDGE and UNDERSTANDING:

By the end of the course, students should be able to:

- A1-** Describe the normal and abnormal physiological and pathological parameters of the different fish species, that may aid in diagnosis of the disease affections.
- A2-** Approtch the appropriate management schedules and programs of fish aquacultures that may affect the growth, body weight gain and reproduction.
- A3-** Denote the appropriate knowledge about the water hydrochemistry of aquacultures for normal fish's life.
- A4-** Determine the nutritional disorders affecting the fish life stage (fry, fingerlings and adults) with their suitable management practices.
- A5-** Recognize the suitable health promotives as well as the preventive measures of fish diseases.
- A6-** Analysis the causes, pathogenesis, clinical signs, post-mortem findings, laboratory investigations, treatments for the most important fish diseases.

3-B: INTELLECTUAL SKILLS:

By the end of the course, students should be able to:

- B1-** differentiate the most important clinical signs and lesions of healthy and diseased fish.
- B2-** Adopt the proper management programs either for fish and /or the fish farm .
- B3-** Mindful the different clinical situations concerned with fish or water hydrochemistry of the fish farm.
- B4-** Interpret the laboratory investigation parameters performed for the fish or the water milieu.

3- C: PRACTICAL AND PROFESSIONAL SKILLS:

By the end of the course, students should be able to:

- C1-** Investigate the pathognomonic clinical signs in diseased fish .
- C2-** Assess the normal developmental stages of fish life stages .
- C3-** Possess appropriate clinical assessments for disease diagnosis.
- C4-** Acquire the Talent of obtaining the proper case history of a fish farm.
- C5-** Perform an adequate clinical investigations for diseased fish or the fish's environment in aquaculture.
- C6-** Prescribe the proper remedies for an affected fish farm.

3- D: GENERAL AND TRANSFERABLE SKILLS:

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

- D1-** Coach and work in groups.
- D2-** Classify different duties
- D3-** Utilize computer and internet skills.
- D4-** Develop the ethical behaviors between students and staff members as well as among the students themselves.
- D5-** Write a full report on a diseased fish farm



4- COURSE CONTENTS:

4. A: First semester topics:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Bacterial Diseases of fish	12	8	4
Parasitic Disease of fish	10	6	4
Commercial farm-food fish	4	2	2
Mycotic Disease of fish	4	2	2
Viral Disease of fish	4	2	2
Nutritional Diseases of fish	4	2	2
General ichthyology and fish biology	4	2	2
Technical terms of aquaculture	4	2	2
Fish farm construction	4	2	2
Hydrobiology and chemistry of aquaculture	4	2	2
laboratory diagnosis of fish diseases	2	-	2
Internal anatomy and external features of fish	2	-	2
Fish transportation & specimens dispatch	2	-	2
Total	60	30	30

4. B: Second semester topics:

TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Bacterial Diseases of fish	8	4	4
Parasitic Disease of fish	8	4	4
Fish aquaculture	4	2	2
Haematological examination of fish blood	2	-	2
Mycotic Disease of fish	4	2	2
Viral Disease of fish	4	2	2
Immunity and stress in fish	2	2	2



TOPIC	Total hours (Semester)	Hours for lecture	Hours for practical
Nutritional Diseases of fish	4	2	2
Water pultants and toxicants	4	2	2
Crustacean disaeses	4	2	2
Prophylaxis, control & treatment of fish Disease	4	2	2
Fish hatching	4	2	2
Diseases of marine fish	6	4	2
Total	60	30	30

5-TEACHING & LEARNING METHODS:

*Lectures

- (using data show, white board and overhead projector

*Practical:

- 1: Practical training.
- (Practical demonstrations, practice of skills, and discussions)

* Field visits

- Fish farm visits

* Self learning

- Computer researches and faculty library visits to prepare essays and presentations.
 - Library researches.
 - Internet researches.
 - Discussion in the researches.
 - Preparation of posters
 - Preparation of scientific reports.

* Audiovisual

- Video show.

6. METHODS FOR STUDENTS WITH LIMITED CAPABILITIES:-

- No disabled students until now, but if present the methods are:
 - Activation of office hours.
 - Discussion with them during practical session.



7. STUDENT ASSESSMENT:

<u>7.a Used methods</u>	Written examination	Oral examination	Practical examination	Activities
<u>7.b time</u>	At the end of the first term And at the end of the second term	At the end of the first term And at the end of the second term	At 15 th week of the end of the first term And at 15 th week of the end of the second term	5 th and 9 th week of each term
<u>7.c grads</u>	50	20	20	10

8. LEARNING AND REFERENCE MATERIALS:

8-1: BASIC MATERIALS:

- Overhead projections, slides and computer presentations used during teaching.
- Course notes lectures

8-2: Recmonded books:

- text book of fish culture(Breeding and cultivation of fish) by Marcel Huet.
- Fish Disease (Diagnosis and treatment) by Edward Noga.
- Fish Medicine by stoskpoff.

8.4: web sites and jouranlsand so on

- WWW.PubMed.com
- WWW.arabvet.com
- WWW.science direct.com
- WWW.FAO.com



Intended learning out comes of each topic in course:

TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
1st Semister				
Bacterial Diseases of fish	A1-A5-A6	B1	C1-C3- C4	D1-D2-D3- D4-D5
Parasitic Disease of fish	A1-A5-A6	B1	C1-C3- C4	D1-D2-D3- D4-D5
Commercial farm-food fish	A1-A2-A3- A4-A5A-A6	B1	C2	D1-D2-D3- D4-D5
Mycotic Disease of fish	A1-A5-A6	B1	C1-C3 C1- C3- C4	D1-D2-D3- D4-D5
Viral Disease of fish	A1-A5-A6	B1	C1-C3- C4	D1-D2-D3- D4-D5
Nutritional Diseases of fish	A4	B1	C1-C3	D1-D2-D3- D4-D5
General ichthyology and fish biology	A1-A2-A3- A4-A5A-A6	B1	C2	D1-D2-D3- D4-D5
Technical terms of aquaculture	A1-A2-A3- A4-A5A-A6	B1	C2	D1-D2-D3- D4-D5
Fish farm construction	A2	B2-B3	C3	D1-D2-D3- D4-D5
Hydrobiology and chemistery of aquaculture	A3	B2-B3	C5	D1-D2-D3- D4-D5
laboratory diagnosis of fish diseases	A5-A6	B2	C5-C6	D1-D2-D3- D4-D5
Internal anatomy and external features of fish	A6	B1	C1-C2	D1-D2-D3- D4-D5
Fish tansportaion &specimens dispatch	A6	B1	C1	D1-D2-D3- D4-D5
2nd Semister				



TOPIC	K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Fish aquaculture	A3-A4-A5	B1	C2	D1-D2-D3-D4-D5
Haematological examination of fish blood	A1-A6	B1	C1	D1-D2-D3-D4-D5
Immunity and stress in fish	A1	B1	C2	D1-D2-D3-D4-D5
Water pultants and toxicants	A2	B2-B3	C3	D1-D2-D3-D4-D5
Crustacean disaeses	A1-A2-A3-A4-A5A-A6	B2-B3	C5	D1-D2-D3-D4-D5
Prophylaxis, control & treatment of fish Disease	A6	B2	C5-C6	D1-D2-D3-D4-D5
Fish hatching	A2	B1	C1	D1-D2-D3-D4-D5
Diseases of marine fish	A1-A2-A3-A4-A5A-A6	B1	C1	D1-D2-D3-D4-D5

Intended learning out comes Evaluation

Methods	I.L.O.S Evaluation				Marks allocated
	Knowledge	Intellectual	Practical	general	
Written examination	A1-A2-A3-A4-A5-A6	B1-B2-B3-B4			50
Oral examination	A1-A2-A3-A4-A5-A6	B1-B2-B3-B4		D4	20
Practical examination		B3	C1-C2-C3-C4-C5-C6		20
Activities		B2-B4		D1.D2.D3.D4.D5	10

Course Coordinator

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