Course specification

1-Basic information

Course Code:	FDM-4148
Course title :	Fish Diseases and Management (part I)
Academic year:	4th year
Program title:	Bachelor of veterinary medical science
Contact hours/ week	4hrs/week (Lecture: 2hrs/week - practical:2hrs/week)
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about the management of cultured fish.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Recognize ichthyology.
a.2. Outline the design & management of fish farms.
a.3. Illustrate artificial propagation of the cultured fish species in Egypt.
a.4. Recall the relationship between fish health and aquatic environment.

b-Intellectual skills

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

b.1. Differentiate fish species.
b.2. Interpret water quality in fish pond and how to maintain and improve it.
b.3. Organize fish health.
b.4. Discriminate fish farming, fish diseases and suitable prevention & control measures.

c-Professional and practical skills

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

c.1. Distinguish the main cultivated fish species
c.2. Prepare fish pond for fertilization & assess water quality and pond fertility
c.3. Perform fish acclimation, feeding, anesthesia, harvesting , sorting and transportation
c.4. Assess the growth and sex of fish.
c.5. Collect & preserve of diagnostic specimens.

D-General and transferable skills

The student should be able to

d.1. Use information technology & information resources.

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d.2. Practice continuous self learning & self evaluation.
d.3. Work in group.
d.4. Communicate with fish specialists.
d.5. Participate in private business.

4-Topics and contents

Course	Topic	weeks	No. of hours	Lectures	Practical
4th year- First term. Fish diseases & management. (Lec. 2 h./week, Pract. 2h./week)	-Basis of aquaculture	1st	2	2	_
	-Pond construction	2nd	2	2	-
	-Fish farming facilities	3rd	2	2	-
	-Fish farming management systems	4th	2	2	-
	-Main fish culture species	5th- 6th	4	4	-
	-Propagation and nursing of tilapia	7th	2	2	-
	- Propagation and nursing of carp	8th	2	2	-
	-Fertilization of fish pond	9th	2	2	-
	Integrated fish culture	10th-11th	4	4	-
	-Routine work of fish farm	12th-13th	4	4	-
	-Technical terms	1st	2	-	2
	-Sampling and assessment of the growth of fish	2nd	2	-	2
	-Morphological features, environment and reproduction of the main cultivated fish species (tilapia, carp, African catfish, mullet, sea bass and sea bream).	3rd- 4th	4	-	4
	- Water analysis	5th -6th	4	-	4
	-Practical methods for determination of pond fertility	7th	2	-	2
	-Principles of artificial propagation of farmed fish	8th	2	-	2
	-Fish feeding	9th	2	-	2
	-Fish harvesting	10th	2	-	2
	-Pond fertilization and liming	11th	2	-	2
	-Control of excessive aquatic	12th	2	-	2

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	vegetation and fish enemies				
	-Control of physicochemical factors	13th	**2**	**-**	**2**
	Students activities **-Computer search& class presentations.**		–	–	–
	- Field visits.	14th			
	Total.		**52**	**26**	**26**

5-Teaching and learning methods

5.1- Lectures (brain storming, discussion) using board and data shows.
5.2- Construct models concerning fish management.
5.3- Practical
5.3.1- Classification of some of native fish species
5.3.2- Fish necropsy
5.3.3- Collection of blood samples.
5.3.4- Field and laboratory activity.

6-Teaching and learning methods for the students with disabilities

More explanation for difficult topics in office- hours

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	**a.4**	**b.4**	**c.5**	**d.4**
Practical exam. & Student activities		**b.1,b.2,b.3,b.4**	**c.1,c.2,c.3,c.4,c.5**	**d.1,d.2,d.3,d.4, d.5**
Oral Exam	**a.1, a.2, a.3, a.4**	**b.1,b.2,b.3,b.4**	**c.1**	**d.1, d.4.**

7.2. Assessment schedules/semester:

Method	**Week(s)**
Practical exams	Week 13th
Written exams	Managed by the administration (within 14-15-16 weeks)
Oral Exam	Managed by the department

7.3. Weight of assessments:

Assessment	**Weight of assessment**

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Practical exams	20%
Written exams	50%
Oral examination	20%
Student activities	10%
Total	100%

8- List of references

8.1. Notes and books

Departmental notes on:

None

-Handout

8.2. Essential books:

- **Aquaculture farming aquatic animals and plants ,3rd Edition ,Edited by John slucas and Paulc Southgate, published by Black well publishing 2003 ,ISBN 0-85238-222-7.**
- **Management for fresh water fish culture,1st Edition, (FAO training series) Published by Oxford & IBH publishing CO.PVT.LTD.1997,ISBN 18-204-1264-8**

***These books are found in the library of faculty of veterinary medicine , Beni-suef university.**

8.3. Recommended books:

- **Cage aquaculture, 2nd Edition ,(Malcolm C.M Beveridge) published by Fishing News Books1996, ISBN 0-85238-235-9**
- **Text book of fish culture breading and cultivation of fish, 2nd Edition, (Marcel huet) Published by Fishing News Books1994, ISBN 0-85238-219-7**
- **Breading and seed production of fin fish and shell fish(Dr. P.C Thomas) Published by Daya Publishing House2003,Indian reprint 2005,ISBN 81-7035-308-4**
- **Fish medicine, 1st Edition, (Michael K.Stoskopf,D.v.m.) Published by W.B. Saunders Company 1996,ISBN 0-7216-2629-7**
- **Fish diseases diagnosis and treatment ,1st Edition, (Edward j.noga) Published by Mosby. Year Book1996, Editor: Lindal.Duncan, ISBN 1-55664-374-8**

***These books are found in the library of faculty of veterinary medicine, Beni-suef university.**

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8.4. Journals, Websites ……..etc

Journals:

- **Aquaculture**
- **Aquatic research**
- **Aquatic science**
- **Aquatic fish organism**
- **Journal of fish biology**
- **Fish & shellfish immunology**
- **Canadian Journal of fisheries & aquatic sciences**

Websites:

- **WWW.fishyfarmacy.com/Symptom**
- **WWW.Aqualink.com/disease/s-**
- **WWW.aquatec-solutions.com**
- **WWW.aquatececo.com**
- **WWW.nationalfishpharm.com**
- **WWW.kiovet.com**
- **WWW.nosickfish.com**
- **WWW.aquariumfish.com**
- **WWW.candyfish.net**
- **WWW.fishreports.net**
- **WWW.fishthe.net**
- **WWW.fishnetdialynews.com**
- **WWW.fishseo.com**
- **WWW.ficklefish.net**
- **WWW.coloradofishing.net**
- **WWW.netmorefish.co.uk**
- **WWW.5fish.net**
- **WWW.saltwetfish.net**

Course Coordinator **Head of Department**

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Topic	weeks	Intended learning outcomes of course (ILOs)			
		K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
-Basis of aquaculture	1st	a.2	b.4	c.2, c.3, c.4	_
-Pond construction	2nd	a.2	b.4	c.2, c.3, c.4	_
-Fish farming facilities	3rd	a.2	b.4	c.2, c.3, c.4	_
-Fish farming management systems	4th	a.2	b.4	c.2, c.3, c.4	_
-Main fish culture species	5th- 6th		b.1	c.1, c.4	
-Propagation and nursing of tilapia	7th	a.3	b.1, b.3	c.1, c.3, c.4	
- Propagation and nursing of carp	8th	a.3	b.1, b.3	c.1, c.3, c.4	
-Fertilization of fish pond	9th	a.2	b.2	c.2	
Integrated fish culture	10th-11th	a.2	b.4	c.1, c.2	
-Routine work of fish farm	12th-13th	a.2	b.4	c.2, c.3, c.4	_
-Technical terms	1st	a.1			
-Sampling and assessment of the growth of fish	2nd			c.4	
-Morphological features, environment and reproduction of the main cultivated fish species (tilapia, carp, African catfish, mullet, sea bass and sea bream).	3rd- 4th	a.1, a.3, a.4	b.2, b.3	c.1, c.2, c.4	
- Water analysis	5th -6th	a.2	b.2	c.1	-
-Practical methods for determination of pond fertility	7th	a.2	b.2	c.2	
-Principles of artificial propagation of farmed fish	8th	a.3	_	c.3, c.4	_
-Fish feeding	9th			c.2, c.3, c.4	
-Fish harvesting	10th			c.3, c.4	

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-Pond fertilization and liming	11th		**b.2**	**c.2**	
-Control of excessive aquatic vegetation and fish enemies	12th		**b.2, b.4**	**c.2, c.5**	
-Control of physicochemical factors	13th		**b.2, b.4**	**c.2, c.5**	
Students activities **-Computer search& class presentations.**					**d.1, d.2, d.3, d.4**
-Field visits					**d.5**

Topic	Week
-Basis of aquaculture	1st
-Pond construction	2nd
-Fish farming facilities	3rd
-Fish farming management systems	4th
-Main fish culture species	5th- 6th
-Propagation and nursing of tilapia	7th
- Propagation and nursing of carp	8th
-Fertilization of fish pond	9th
Integrated fish culture	10th- 11th
-Routine work of fish farm	12th- 13th
-Technical terms	1st
-Sampling and assessment of the growth of fish	2nd
-Morphological features, environment and reproduction of the main cultivated fish species (tilapia, carp, African catfish, mullet, sea bass and sea bream).	3rd- 4th
- Water analysis	5th -6th
-Practical methods for determination of pond fertility	7th
-Principles of artificial propagation of farmed fish	8th
-Fish feeding	9th
-Fish harvesting	10th
-Pond fertilization and liming	11th
-Control of excessive aquatic vegetation and fish enemies	12th
-Control of physicochemical factors	13th