



Beni-Suef University
Faculty of Veterinary Medicine
Fish department

Program Specification for Master Degree
2017-2018

A-Basic information:

- 1- Program title: MVSC**
- 2- Program type: Single**
- 3- Department offering program:**
- 4-Academic year: 2017-2018**
- 5-Approval date of Department Council:**
- 6-Approval date of Faculty Council:**
- 7-External evaluator:**

B-Professional information:

1-Overall aims of the program:

- 1- Introducing the academic background and practical experience about the management of cultured fish and keeping fish in a state of good health and provide them with the opportunity to develop communication skills.**
- 2- Enable graduates to achieve competency in modern laboratory technology in field of fish diseases and management.**
- 3- Allow graduates to develop practical research project and develop the ability of graduates to engage critically with scientific literature, critically reviews and present their own research data.**
- 4- Collect, manage and analyze the scientific data of fish diseases and management.**

2- Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

On successful completion of this program the graduate should be able to:

- a.1. Acquire the differential concepts of ichthyology.
- a.2. Outline the design & management of fish farms.
- a.3. Illustrate artificial propagation of the cultured fish species in Egypt.
- a.4. Identify the relationship between fish health and aquatic environment.
- a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.
- a.6. Acquire the main concepts in fish behavior , management and other career related sciences.
- a.7. Distinguish the managerial professional practices in fish farm.
- a.8. Recognize the fundamentals to follow up the recent researches in the field of fish diseases and management.

b- Intellectual skills:

On successful completion of master program the graduate 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.
- b.5. Solve managerial problems with inadequacy of some resources.
- b.6. Design a scientific research plan.
- b.7. Evaluate their own research data, define research problems and questions.

c- Professional and practical skills:

On successful completion of this program the graduate should be able to:

- c.1. Master the main cultivated fish species
- c.2. Prepare fish pond for fertilization & assess water quality and pond fertility.
- c.3. Perform technical tools for fish farm management including fish acclimation,

feeding, anesthesia, harvesting , etc...

c.4. Assess the growth and sex of fish.

c.5. Deal with diagnostic specimens during collection , transportation and preservation.

c.6. Perform clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish specimens.

c.7. Apply fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.

c.8. Share in seminars and conferences.

d- General and transferable skills:

On successful completion of this program the graduate should be able to:

d.1. Use information resources to improve aspects for new technological intentions.

d.2. Practice continuous self learning & self evaluation.

d.3. Work in group.

d.4. Communicate with fish farmers, researchers and qualified fish specialists.

d.5. Participate in private business.

3- Academic standers:

*** The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are inline with the department and the faculty mission.**

*** Postgraduates NARS (March 2009) Master degree chapter issued by national authority for quality assurance and accreditation of education (NAQAAE) and Veterinary medicine post graduate academic standards (ARS) for the faculty of veterinary medicine, Beni-Suef University, Beni-Suef, Egypt are selected to confirm the appropriateness of the academic standards .**

4- Program Structure and Contents

A- Program duration: At least two academic years from the approval of registration by the Faculty Council and maximum four years. The faculty council has the right to give the applicant another period not exceed two years according to the supervisor request

The first year for preliminary courses study, while the second year for researches and preparation of the Master Thesis.

B- Program structure:

Hours/ week:

Theoretical	11-12	Practical	12-13	Total	17-18.5
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Basic course:-

Theoretical	4	Practical	7	Total	9.5
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Subsidiary courses:-

Theoretical	5-6	Practical	5-6	Total	7.5-9
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☒ **Master Thesis: completed during the second academic year.**

C- Program courses:

A- basic courses

Code	Course title	Hours /week		Academic year	Teaching duration
		theoretical	practical		
	Master Principal course	3	4	Preliminary year	36 weeks
	Research methods	1	3	Preliminary year	36 weeks

B-subsubsidiary courses

Code	Course title	Hours /week		Academic year	Semester
		Theoretical	practical		
	Selected courses (3-5) depending	5-6	6-9	Preliminary year	36 weeks

	on the thesis title from the various Faculty Master courses other than specialty of the Master.				
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D- Courses contents

See master courses specification

5- Program Admission Requirements

a- According to the Faculty of Veterinary Medicine, Beni-Suef University By laws for Post Graduate Programs, applicants should have BVSc., from an Egyptian University or equivalent degree from any approved university, with at least general grade (Good) and (Very Good) in the specialized subject.

b- Also if the student has postgraduate diploma in one specialization of total (3 hours) at least with general grade (Good) and (Very good) in the specialized subject.

c- According to Beni-Suef University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects:

1- English language (Toefl or equivalent degree)

2- Computer skills (ICDL) or equivalent computer course.

d- Admission to the program is open during March and September annually after at least one year from the BVSc degree.

6. Regulations for Progression and Program Completion

After finishing the preliminary courses, the graduate student will be eligible to sit for the examination according to the following roles:

No. of teaching hours/ week	Allowed time for written exam.	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

- It is mandatory to pass all the courses each chance except biostatic (212)

-The passing mark in each exam is $\geq 60\%$.

-The faculty council has the right to deprive the applicant from entering the exams

if his attendance courses is less than 75% .

Qualification grades:

Excellent	≥ 90
Very good	≥80
Good	≥70
Pass	≥60
Failed	45 to less than 60 weak
	Less than 45 Very weak

-After passing, the graduate starts research for Master Thesis at the beginning of the second year.

-The candidate will receive his degree after evaluating and approving the thesis by a committee according to University regulations.

-The applicant should publish at least two scientific papers from the thesis in local or international journals

7-Graduate student assessment

A: Assessment Tools

According the Faculty of Veterinary Medicine, Beni-Suef University by laws for Post Graduate, students should be assessed at the end of preliminary year and the thesis should be evaluated and approved by a committee according to University regulations.

1-Preliminary year

Assessments methods for each course	practical exam	Oral exam	Written exam
Time of Assessments	By the end of the year	By the end of the year	By the end of the year
Marks	25	25	50

2-Master Thesis:

All master-degree students should prepare a thesis in fish diseases and management. The department council must approve the protocol (plan) of the research. The thesis is supervised by one or more staff members and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee according to University regulations. The applicant should publish at least one scientific paper from

the thesis in local or international journals

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
written exam	a1-a5	b1,b4	C2	d1
Practical exam	a2,a4,a7	b1,b2,b4	c1,c2,c5	d1,d2
Oral exam	a1-a5	b1-b8	c1,c4	d1,d3,d4

B- Matrix alignment of the measured ILOs

Course coordinator

Head of the Department

Master Program Specification Matrix (Program ILOS with Academic standers ARS)

Academic standers Program ILOs		Knowledge and understanding						Intellectual skills							Professional and practical skills							General and transferable skills						
		a1	a 2	a 3	a 4	a5	a6	b1	b 2	b 3	b4	b 5	b6	b 7	c1	c2	c3	c4				d1	d2	d3	d4	d5	d6	d7
Knowledge and understanding	a1	X					X																					
	a2					X																						
	a3				X																							
	a4	X																										
	a5	X	X																									
	a6				X																							
	a7				X	X																						
	a8			X			X																					
Intellectual skills	b1																											
	b2						X		X		X		X															
	b3																											
	b4							X	X		X																	
	b5							X																				
	b6						X			X		X																
	b7										X	X																
Professional and practical skills	c1													X														
	c2													X														
	c3													X		X												
	c4															X												
	c5														X	X												
	c6														X													
	c7															X												

Master Program Specification Matrix (Program Courses with ILOS)

Program ILOs		Courses
Knowledge and understanding	a1	M-11, M-22, M—25, M-41
	a2	M-211
	a3	M-179, M-211
	a4	M179-M-183 (180)
	a5	M-179 –M-180- M-181- M-182- M-183, M-67, Thesis
	a6	M-179,M-41
	a7	M-183-M-211
	a8	M-179,M-180,M-181,M182,M-183,M-184,M-185,M-186
Intellectual skills	b1	M-11
	b2	M-183
	b3	M-179 –M-180, M-181
	b4	M-179, M-180. M-183
	b5	M-211, M-51
	b6	Thesis

Professional and practical skills	b7	Thesis
	c1	M-211
	c2	M-25,M-183,M-211
	c3	M-51, M-183, M-211
	c4	M-211
	c5	M-67, M-85, M-97, M-184, M-185, M-186
	c6	M-85, M-97, M-179,M-180, M-181, M-182, M-183,M-184
General and transferable skills	c7	M-103, M-183
	d1	Thesis
	d2	Thesis
	d3	M-179, Thesis
	d4	M-183
	d5	M-183,M-211

Program aims – ILOS Matrix for the Master program (MVSC)

مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

Program aims	Program aims
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		1.1. Introducing the academic background and practical experience about the management of cultured fish and keeping fish in a state of good health and provide them with the opportunity to develop communication skills.	1.2. Enable graduates to achieve competency in modern laboratory technology in field of fish diseases and management.	1.3. Allow graduates to develop practical research project and develop the ability of graduates to engage critically with scientific literature, critically reviews and present their own research data.	1.4. Collect, manage and analyze the scientific data of fish diseases and management.
Knowledge and understanding	a.1. Acquire the differential concepts of ichthyology.	√			
	a.2 Outline the design & management of fish farms.	√		√	
	a.3. Illustrate artificial propagation of the cultured fish species in Egypt.	√		√	
	a.4. Identify the relationship between fish health and aquatic environment.		√		√
	a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.		√	√	

	a.6 .Acquire the main concepts in fish behavior, management and other career related sciences.	√			√
	a.7. Distinguish the managerial professional practices in fish farm.			√	
	a.8. Recognize the fundamentals to follow up the recent researches in the field of fish diseases and management.		√		
Intellectual skills	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.		√	√	√
	b.5. Solve managerial				

	problems with inadequacy of some resources.			√	√
	b.6. Design a scientific research plan.				√
	b.7. Evaluate their own research data, define research problems and questions.			√	
Practical and professional skills	c. 1.Master the main cultivated fish species	√			
	c.2 .Prepare fish pond for fertilization & assess water quality and pond fertility.		√	√	
	c.3. Perform technical tools for fish farm management including fish acclimation, feeding, anesthesia, harvesting , etc...			√	√
	c.4. Assess the growth and sex of fish.		√	√	
	c.5. Deal with diagnostic specimens during collection , transportation and preservation.			√	

	c.6. Perform clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish specimens.			√	√
	c.7. Apply sh diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.		√		√
	c.8. Share in seminars and conferences.			√	
General and transferable skills	d.1. Use information resources to improve aspects for new technological intentions.			√	√
	d.2. Practice continuous self learning & self evaluation.				√
	d.3. Work in group.				√
	d.4. Communicate with fish farmers, researchers and qualified fish			√	

	specialists.				
	d.5. Participate in private business.		√	√	√



Course specification

1-Basic information

Course Code:	MBC-ICTH
Course title :	Primary master of fish Diseases & Management
Contact hours/ week	7hrs/week (Lecture: 3hrs/week - practical:4hrs/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 and keeping fish in a state of good health.

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. Set 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.
- a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.

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.
- c.6. Perform clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish.
- c.7. Apply fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.



Course specification

D-General and transferable skills

The student should be able to

- d.1. Use information technology & information resources.
- 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	No. of hours	Lectures	Practical
(Lec. 3 h./week, Pract. 4h./week)	-Introduction, stress & its relation to diseases in fish	20	20	—
	-Parasitic diseases of fish	40	40	-
	-Bacterial diseases of fish	40	40	—
	-Mycotic diseases of fish	20	20	—
	-Viral diseases of fish	16	16	—
	- Non infectious diseases.	20	20	—
	-Regional anatomy, applied physiology of cultured & wild fish	40	—	40
	-Fish classification	14	—	14
	-Fish necropsy	10	—	10
	-Water quality examination	30	—	30
	-Fish farming	30	—	30
	-Natural & artificial propagation of cultured fish	20	—	20
	-Clinical diagnosis of fish diseases	25	—	25
	-Laboratory diagnosis of fish diseases	25	—	25
	-Prevention & Control of fish diseases	24	—	24
	Students activities -computer search& class presentations. -Field visits.	—	—	—
	Total	364	156	208

5-Teaching and learning methods



Course specification

- 5.1- Lectures (brain storming, discussion) using board and data shows.
5.2- Construct models concerning fish diseases & management.
5.3- Practical (classification of some of native fish species, fish necropsy, collection of blood samples).

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,a.5	b.4		
Practical exam. & Student activities	a.1, a.2, a.3	b.1,b.2,b.3,b.4	c.1,c.2,c.3,c.4,c.5,c.6,c.7	d.1,d.2,d.3,d.4, d.5
Oral Exam	a.1, a.2, a.3, a.4, a.5	b.1,b.2,b.3,b.4	c.1	d.1, d.4.

7.2. Assessment schedules/semester:

Method	Week(s)
Written examination -	- Week 54 th
Practical examination -	- week 53 th
Oral examination -	- week 54 th

7.3. Weight of assessments:

Assessment	Weight of assessment
Written examination -	50%
Practical examination -	30%
Oral examination -	20%

8- List of references

8.1. Notes and books



Course specification

Departmental notes on:

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947
- 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
- Bacterial fish pathogens, 4th edition, 2007 (B. Austin.& D.A.Austin)

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

8.3. Recommended books:

- 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
- Cage aquaculture, 2nd Edition ,(Malcolm C.M Beveridge)
published by Fishing News Books1996, ISBN 0-85238-235-9
- Text book of fish culture breeding and cultivation of fish, 2nd Edition, (Marcel huet)
Published by Fishing News Books1994, ISBN 0-85238-219-7
- Breeding 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.

8.4. Journals, Websitesetc

Journals:

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

Websites:

- WWW.fishyfarmacy.com/Symptom
- WWW.Aqualink.com/disease/s-
- WWW.aquatec-solutions.com
- WWW.aquatececo.com



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- WWW.fishdisease.net
- WWW.nationalfishpharm.com
- WWW.kiovet.com
- WWW.nosickfish.com
- WWW.aquariumfish.com
- WWW.candyfish.net
- WWW.fishreports.net
- WWW.fishthe.net
- WWW.fishnetdailynews.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



Course specification

Topic	Hours	Intended learning outcomes of course (ILOs)			
		K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Course description		a.1, a.4	–	–	–
-Introduction, stress & its relation to diseases in fish	20	a.5	–	–	–
-Parasitic diseases of cultured & wild fish	40	a.5	–	–	–
-Bacterial diseases of cultured & wild fish	40	a.5	–	–	–
-Mycotic diseases of cultured & wild fish	20	a.5	–	–	–
-Viral diseases of cultured & wild fish	16	a.1	–	–	–
- Non infectious diseases of cultured & wild fish.	20	–	b.1	c.2	–
-Regional anatomy, applied physiology of fish	40	–	–	c.6	–
-Fish classification	14	a.2	b.2	c.1	-
-Fish necropsy	10	a.2	b.4	c.1 c.3 c.4	–
-Water quality examination	30	a.3	–	c.3 c.4	–
-Fish farming	30	a.5	b.4	c.6	–
-Natural & artificial propagation of cultured fish	20	a.5	b.4	c.5 c.6	–
-Clinical diagnosis of fish diseases	25	a.5	b.4	c.7	–
-Laboratory diagnosis of fish diseases	25	–	–	–	d.1, d.2, d.3, d.4
-Prevention &Control of fish diseases	24	-	–	–	d.5



Course specification of postgraduate

1-Basic information

Course Code:	M- 179
Course title :	Fish Diseases & Management of freshwater fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 2 Total: 4
Approval Date	

2-Professional information

The main purpose of this course is introducing the academic background and practical experience about the management of cultured freshwater fish and keeping fishes in a state of good health.

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. Acquire the differential concepts of ichthyology
- a.2. Outline the design & management of fish farms.
- a.3. Illustrate artificial propagation of the cultured freshwater fish species in Egypt.
- a.4. Recall the relationship between freshwater fish health and aquatic environment.
- a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of freshwater fish diseases.

b-Intellectual skills

By the end of studying 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. Score fish health
- b.4. Discriminate fish farming, fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Identify the main cultivated freshwater 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 freshwater fish.
- c.5 Collect & preserve of diagnostic specimens.
- c.6 Perform Clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of freshwater fish.
- c.7. Assess water & diet quality.
- c.8. Apply freshwater fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.



Course specification of postgraduate

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to diseases in freshwater fish.	10	10	–
	-Parasitic diseases of freshwater fish .	24	24	-
	-Bacterial diseases of freshwater fish.	24	24	–
	-Mycotic diseases of freshwater fish.	18	18	–
	-Viral diseases of freshwater fish.	13	13	–
	- Non infectious diseases of freshwater fish.	15	15	–
	-Regional anatomy, applied physiology of freshwater fish.	20	–	20
	-Fish classification	5	–	5
	-Fish necropsy	8	–	8
	-Water quality examination	20	–	20
	-Fish farming	20	–	20
	-Natural & artificial propagation of cultured freshwater fish.	5	–	5
	-Clinical diagnosis of freshwater fish.	8	–	8
	-Laboratory diagnosis of freshwater fish diseases.	8	–	8
	-Prevention &Control of freshwater fish diseases	10	–	10
	Total	208	104	104

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits



Course specification of postgraduate

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 examination	a4- a5	b4		
- Practical examination		b1- b2- b3	c1- c2- c3- c4-c5-c6- c7-c8	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947

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

8.3. Recommended books

- 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



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Course specification of postgraduate

- Diseases of carp, 1st Edition, Published by Fishing news books, 2002, ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition, 2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology
- Fish and fisheries journal
- Journal of fish biology
- Journal of shellfish research
- Canadian Journal of fisheries & aquatic sciences
- Veterinary pathology and Immunopathology
- Journal of aquatic animal health
- Turkish journal of fisheries and aquatic science

Websites

- WWW.fishyfarmacy.com/Symptom
- WWW.Aqualink.com/disease/s-
- WWW.aquatec-solutions.com
- WWW.aquatececo.com
- WWW.fishdisease.net
- WWW.nationalfishpharm.com
- WWW.kiovet.com
- WWW.nosickfish.com
- WWW.aquariumfish.com
- WWW.candyfish.net

- Course Coordinators

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction, stress & its relation to diseases in freshwater fish.	10	a.1-a.3			
2	-Parasitic diseases of freshwater fish .	24	a.5		c.1, c.2	
3	-Bacterial diseases of freshwater fish.	24	a.5			
4	-Mycotic diseases of freshwater fish.	18	a.5			
5	-Viral diseases of freshwater fish.	13	a.1			
6	- Non infectious diseases of freshwater fish.	15	a.4-a.5	b.3-b.4	C2-c3-c4	
7	-Regional anatomy, applied physiology of freshwater fish.	20			c.6	
8	-Fish classification	5	a.2	b.2	c.1	
9	-Fish necropsy	8	a.2-a.6	b.3	c.1	
10	-Water quality examination	20	a.3		c.3-c.4	
11	-Fish farming	20	a.5	b.4	c.6	
12	-Natural & artificial propagation of cultured freshwater fish.	5	a.5	b.4	c.5c.6	
13	-Clinical diagnosis of freshwater fish.	8	a.3		c.3.c4.c5	
14	-Laboratory diagnosis of freshwater fish diseases.	8	a.5	b.4	c.8	
15	-prevention & Control of freshwater fish diseases	10	a.5		c.8	
	Total	208				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4



Course specification of postgraduate

1-Basic information

Course Code:	M- 180
Course title :	Fish Diseases & Management of marine water fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 2 Total: 4
Approval Date	

2-Professional information

The main purpose of this course is introducing the academic background and practical experience about the management of cultured marine water fish and keeping fishes in a state of good health.

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 marine fish species in Egypt.
- a.4..Recall the relationship between marine fish health and aquatic environment.
- a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of marine fish diseases.

b-Intellectual skills

By the end of studying 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. Score fish health
- b.4. Discriminate fish farming, fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Identify the main cultivated marine 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 marine fish.
- c.5 Collect & preserve of diagnostic specimens.
- c.6 Perform Clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of marine fish.
- c.7. Assess water & diet quality.
- c.8. Apply marine fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.



Course specification of postgraduate

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to diseases in marine fish.	10	10	–
	-Parasitic diseases of marine fish .	24	24	-
	-Bacterial diseases of marine fish.	24	24	–
	-Mycotic diseases of marine fish.	18	18	–
	-Viral diseases of marine fish.	13	13	–
	- Non infectious diseases of marine fish.	15	15	–
	-Regional anatomy, applied physiology of marine fish.	20	–	20
	-Fish classification	5	–	5
	-Fish necropsy	8	–	8
	-Water quality examination	20	–	20
	-Fish farming	20	–	20
	-Natural & artificial propagation of cultured marine fish.	5	–	5
	-Clinical diagnosis of marine fish.	8	–	8
	-Laboratory diagnosis of marine fish diseases.	8	–	8
	-prevention &Control of marine fish diseases	10	–	10
	Total	208	104	104

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits



Course specification of postgraduate

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 examination	a4- a5	b4		
- Practical examination		b1- b2- b3	c1- c2- c3- c4-c5-c6- c7-c8	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947

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

8.3. Recommended books

-Bacterial pathogens

- 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,



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

ISBN 1-55664-374-8

- Diseases of carp, 1st Edition, Published by Fishing news books, 2002, ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition, 2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology
- Fish and fisheries journal
- Journal of fish biology
- Journal of shellfish research
- Canadian Journal of fisheries & aquatic sciences
- Veterinary pathology and Immunopathology
- Journal of aquatic animal health
- Turkish journal of fisheries and aquatic science

Websites

- WWW.fishyfarmacy.com/Symptom
- WWW.Aqualink.com/disease/s-
- WWW.aquatec-solutions.com
- WWW.aquatececo.com
- WWW.fishdisease.net
- WWW.nationalfishpharm.com
- WWW.kiovet.com
- WWW.nosickfish.com
- WWW.aquariumfish.com
- WWW.candyfish.net

- Course Coordinators

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction, stress & its relation to diseases in marine fish.	10	a.1-a.3			
2	-Parasitic diseases of marine fish .	24	a.5		c.1, c.2	
3	-Bacterial diseases of marine fish.	24	a.5			
4	-Mycotic diseases of marine fish.	18	a.5			
5	-Viral diseases of marine fish.	13	a.1			
6	- Non infectious diseases of marine fish.	15	a.4-a.5	b.3-b.4	C2-c3-c4	
7	-Regional anatomy, applied physiology of marine fish.	20			c.6	
8	-Fish classification	5	a.2	b.2	c.1	
9	-Fish necropsy	8	a.2-a.6	b.3	c.1	
10	-Water quality examination	20	a.3		c.3-c.4	
11	-Fish farming	20	a.5	b.4	c.6	
12	-Natural & artificial propagation of cultured marine fish.	5	a.5	b.4	c.5c.6	
13	-Clinical diagnosis of marine fish.	8	a.3		c.3.c4.c5	
14	-Laboratory diagnosis of marine fish diseases.	8	a.5	b.4	c.8	
15	-prevention & Control of marine fish diseases	10	a.5		c.8	
	Total	208				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4



Course specification of postgraduate

1-Basic information

Course Code:	M- 181
Course title :	Crustaceans Diseases & Management
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 2 Total: 4
Approval Date	

2-Professional information

The main purpose of this course is introducing the academic background and practical experience about the management of crustaceans and keeping crustaceans in a state of good health.

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 crustaceans farms.
- a.3. Illustrate artificial propagation of the crustaceans species in Egypt.
- a.4..Recall the relationship between crustaceans health and aquatic environment.
- a.5. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of crustaceans diseases

b-Intellectual skills

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

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

c- Professional and practical skills

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

- c.1. Identify the main cultivated crustaceans species
- c.2. Prepare crustaceans pond for fertilization & assess water quality and pond fertility
- c.3. Perform Crustaceans acclimation, feeding, anesthesia, harvesting , sorting and transportation
- c.4. Assess the growth and sex of crustaceans.
- c.5 Collect & preserve of diagnostic specimens.
- c.6 Perform Clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of crustaceans.
- c.7. Assess water & diet quality.



Course specification of postgraduate

c.8. Apply crustaceans diseases treatment, hygienic disposal of diseased crustaceans & disinfection of crustaceans culture facilities.

d- General and transferable skills

The student graduate be able to

d.1. Use information technology & information resources.

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	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to diseases in crustaceans.	5	5	—
	-Parasitic diseases of crustaceans.	12	12	-
	-Bacterial diseases of crustaceans.	6	6	—
	-Mycotic diseases of crustaceans.	9	9	—
	-Viral diseases of crustaceans	12	12	—
	- Non infectious diseases of crustaceans.	7	7	—
	-Regional anatomy, applied physiology of cultured & wild crustaceans	10	—	10
	-Crustaceans classification	2	—	2
	-Crustaceans necropsy	4	—	4
	-Water quality examination	10	—	10
	-Crustaceans farming	10	—	10
	-Natural & artificial propagation of cultured crustaceans	3	—	3
	Clinical diagnosis of crustaceans diseases	4	—	4
	-Laboratory diagnosis of crustaceans diseases	4	—	4
	-prevention &Control of crustaceans diseases	5	—	5
	Students activities -computer search& class presentations. -Field visits.	—	—	
	Total	104	52	52



Course specification of postgraduate

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a4- a5	b4		
- Practical examination	a4-a2- a3	b1- b2- b3-b4	c1- c2- c3- c4-c5-c6- c7-c8	d1-d2-d3- d4-d5
- Oral examination	a1- a2 –a3-a4-a5	b1- b2- b3-b4	c1- c2- c3- c4	d1-d2-d3- d4-d5

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947

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

8.3. Recommended books



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology
- Fish and fisheries journal
- Journal of fish biology
- Journal of shellfish research
- Canadian Journal of fisheries & aquatic sciences
- Veterinary pathology and Immunopathology
- Journal of aquatic animal health
- Turkish journal of fisheries and aquatic science

Websites

- WWW.fishyfarmacy.com/Symptom
- WWW.Aqualink.com/disease/s-
- WWW.aquatec-solutions.com
- WWW.aquatececo.com
- WWW.fishdisease.net
- WWW.nationalfishpharm.com
- WWW.kiovet.com
- WWW.nosickfish.com
- WWW.aquariumfish.com
- WWW.candyfish.net

- Course Coordinators

Head of Department



Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
1	Course description					
2	-Introduction, stress & its relation to diseases in crustaceans.	5	a.1-a.4		c.1, c.2	
3	-Parasitic diseases of crustaceans.	12	a.2			
4	-Bacterial diseases of crustaceans.	6	a.5			
5	-Mycotic diseases of crustaceans.	9	a.5			
6	-Viral diseases of crustaceans	12	a.5			
7	- Non infectious diseases of crustaceans.	7	a.4-a.5			
8	-Regional anatomy, applied physiology of cultured & wild crustaceans	10	a.1			
9	-Crustaceans classification	2	a.1	b.1-b.5		
10	-Crustaceans necropsy	4				
11	-Water quality examination	10	a2	b2		
12	-Crustaceans farming	10	a2	b4	c.1-c2-c3-c4	
13	-Natural & artificial propagation of cultured crustaceans	3	a.3		c.3.c4.c5	
14	-Clinical diagnosis of crustaceans diseases	4	a.5	b.3-b4	c.6	
15	-Laboratory diagnosis of crustaceans diseases	4	a.5	b3-b4	c.6	
16	-prevention &Control of crustaceans diseases	5	a.5	b4	c.5-c.6	
	Total	104				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	M- 182
Course title :	Diseases of environmental pollution & toxicity in fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 1 Total: 3
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about keeping fishes in a state of good health.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a.1. Recall the relationship between fish health and aquatic environment.
- a.2. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.

b-Intellectual skills

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

- b.1. Interpret water quality in fish pond and how to maintain and improve it.
- b.2. Score fish health
- b.3. Discriminate fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Collect & preserve of diagnostic specimens.
- c.2. Perform Clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish.
- c.3. Assess water & diet quality.
- c.4. Apply fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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.



Course specification of postgraduate

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction of pollution indicators & chemical toxicity in fish.	10	10	–
	- Classification & scientific identification of indicators (pollution indicators).	30	30	–
	- Types of pollution indicators & its importance in early diagnosis of toxicity diseases in fish	34	34	–
	- The side effects of pollution on cultured fish.	30	30	–
	-Water quality examination	10	–	10
	-Clinical diagnosis of pollution & chemical toxicity in fish.	10	–	10
	-Laboratory diagnosis of pollution & chemical toxicity in fish.	10	–	10
	-Prevention & control of pollution & chemical toxicity in fish.	22	–	22
	Students activities -computer search& class presentations. -Field visits.	–	–	–
	Total	156	104	52

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a1- a2	b1-b2-b3		
- Practical examination	a1- a2	b1- b2- b3- b.4	c1- c2- c3- c4	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3		



Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947
- 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
- Bacterial fish pathogens, 4th edition, 2007 (B. Austin.& D.A.Austin)

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

8.3. Recommended books

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

- **Fish & shellfish immunology**
- **Journal of fish pathology**
- **Fish and fisheries journal**
- **Journal of fish biology**
- **Journal of shellfish research**
- **Canadian Journal of fisheries & aquatic sciences**
- **Veterinary pathology and Immunopathology**
- **Journal of aquatic animal health**
- **Turkish journal of fisheries and aquatic science**

Websites

- **WWW.fishyfarmacy.com/Symptom**
- **WWW.Aqualink.com/disease/s-**
- **WWW.aquatec-solutions.com**
- **WWW.aquatececo.com**
- **WWW.fishdisease.net**
- **WWW.nationalfishpharm.com**
- **WWW.kiovet.com**
- **WWW.nosickfish.com**
- **WWW.aquariumfish.com**
- **WWW.candyfish.net**

- **Course Coordinators**

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction of pollution indicators & chemical toxicity in fish.	10	a.1			
2	- Classification & scientific identification of indicators (pollution indicators).	28	a.1			
3	- Types of pollution indicators & its importance in early diagnosis of toxicity diseases in fish	27	a.1	b.2		
4	- The side effects of pollution on cultured fish.	15	a.1	b.2		
5	-Water quality examination	12	a.1	b.1	c.3	
6	-Clinical diagnosis of fish diseases	12	a.2	b.2-b.3	C2	
7	-Laboratory diagnosis of fish diseases	10	a.2	b.3	C1-c2	
8	-Prevention & control of fish diseases	10	a.2	b.3	c.3-c.4	d.4
9	Total	156				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4



Course specification of postgraduate

1-Basic information

Course Code:	M- 183
Course title :	Principals of diseases control in fish farm
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 1 Total: 3
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about keeping fishes in a state of good health.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a.1. Recall the relationship between fish health and aquatic environment.
- a.2. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.

b-Intellectual skills

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

- b.1. Interpret water quality in fish pond and how to maintain and improve it.
- b.2. Score fish health
- b.3. Discriminate fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Collect & preserve of diagnostic specimens.
- c.2. Perform Clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish.
- c.3. Assess water & diet quality.
- c.4. Apply fish diseases treatment, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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.



Course specification of postgraduate

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction of diseased problems in fish.	10	10	–
	- Control of parasitic diseases of fish	28	28	–
	- Control of bacterial diseases of fish	27	27	–
	- Control of mycotic diseases of fish	15	15	–
	- Control of viral diseases of fish	12	12	–
	- Control of non infectious diseases of fish	12	12	–
	-Water quality examination	10	–	10
	-Clinical diagnosis of fish diseases	10	–	10
	-Laboratory diagnosis of fish diseases	10	–	10
	-Prevention & control of fish diseases	22	–	22
	Students activities -computer search& class presentations. -Field visits.	–	–	–
	Total	156	104	52

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a1- a2	b1-b2-b3		
- Practical examination	a1- a2	b1- b2- b3- b.4	c1- c2- c3- c4	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3		

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th



Course specification of postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947
- 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
- Bacterial fish pathogens, 4th edition, 2007 (B. Austin.& D.A.Austin)

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

8.3. Recommended books

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology
- Fish and fisheries journal
- Journal of fish biology
- Journal of shellfish research



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

- Canadian Journal of fisheries & aquatic sciences
- Veterinary pathology and Immunopathology
- Journal of aquatic animal health
- Turkish journal of fisheries and aquatic science

Websites

- WWW.fishyfarmacy.com/Symptom
- WWW.Aqualink.com/disease/s-
- WWW.aquatec-solutions.com
- WWW.aquatececo.com
- WWW.fishdisease.net
- WWW.nationalfishpharm.com
- WWW.kiovet.com
- WWW.nosickfish.com
- WWW.aquariumfish.com
- WWW.candyfish.net

- Course Coordinators

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction of diseased problems in fish.	10	a.1	b.1-b.2-b.3		
2	- Control of parasitic diseases of fish	28	a.2	b.1-b.2-b.3		
3	- Control of bacterial diseases of fish	27	a.2	b.1-b.2-b.3		
4	- Control of mycotic diseases of fish	15	a.2	b.1-b.2-b.3		
5	- Control of viral diseases of fish	12	a.2	b.1-b.2-b.3		
6	- Control of non infectious diseases of fish	12	a.2	b.1-b.2-b.3		
7	-Water quality examination	10	a.1	b.1	c.3	
8	-Clinical diagnosis of fish diseases	10	a.2	b.2-b.3	c.2.	d.4
9	-Laboratory diagnosis of fish diseases	10	a.2	b.3	c.2-c.3	
10	-Prevention & control of fish diseases	22	a.2	b.3	c.3-c.4	
	Total	156				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4-d.5



Course specification of postgraduate

1-Basic information

Course Code:	M- 184
Course title :	parasitic diseases of fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 2 Total: 4
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about keeping fishes in a state of good health.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a.1. Recall the relationship between fish health and aquatic environment.
- a.2. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of parasitic fish diseases.

b-Intellectual skills

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

- b.1. Interpret water quality in fish pond and how to maintain and improve it.
- b.2. Score fish health
- b.3. Discriminate parasitic fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Collect & preserve of diagnostic specimens.
- c.2. Perform Clinical, post-mortem and parasitic examinations of fish.
- c.3. Assess water & diet quality.
- c.4. Apply treatment of fish parasitic diseases, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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 specification of postgraduate

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to parasitic diseases in fish	10	10	–
	- Scientific classification of parasitic diseases of fish.	10	10	–
	-Parasitic diseases of fish	84	84	-
	-Fish necropsy	10	–	10
	-Water quality examination	20	–	20
	-Clinical diagnosis of parasitic fish diseases	20	–	20
	-Laboratory diagnosis of parasitic fish diseases	40	–	40
	-Prevention & control of parasitic fish diseases	14	–	14
	Students activities -computer search& class presentations. -Field visits.	–	–	–
	Total	208	104	104

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a1- a2	b3		
- Practical examination		b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947

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

8.3. Recommended books

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology
- Fish and fisheries journal
- Journal of fish biology
- Journal of shellfish research
- Canadian Journal of fisheries & aquatic sciences
- Veterinary pathology and Immunopathology
- Journal of aquatic animal health
- Turkish journal of fisheries and aquatic science



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

Websites

- **WWW.fishyfarmacy.com/Symptom**
- **WWW.Aqualink.com/disease/s-**
- **WWW.aquatec-solutions.com**
- **WWW.aquatececo.com**
- **WWW.fishdisease.net**
- **WWW.nationalfishpharm.com**
- **WWW.kiovet.com**
- **WWW.nosickfish.com**
- **WWW.aquariumfish.com**
- **WWW.candyfish.net**

- **Course Coordinators**

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction, stress & its relation to parasitic diseases in fish	10	a.1	b.2		
2	- Scientific classification of parasitic diseases of fish.	10	a.2			
3	-Parasitic diseases of fish	84	a.2			
4	-Fish necropsy	10			c.2	
5	-Water quality examination	20	a.2	b.1	c.1	
6	-Clinical diagnosis of parasitic fish diseases	20	a.2	b.2 & b.3	c.2	
7	-Laboratory diagnosis of parasitic fish diseases	40	a.2	b.3	c.1-c.2	
8	-Prevention & control of parasitic fish diseases	14	a.2	b.3		
9	Total	208				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4-d.5



Course specification of postgraduate

-Basic information

Course Code:	M- 185
Course title :	Bacterial & mycotic diseases of fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 2 practical : 2 Total: 4
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about keeping fishes in a state of good health.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a.1. Recall the relationship between fish health and aquatic environment.
- a.2. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of bacterial & mycotic fish diseases.

b-Intellectual skills

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

- b.1. Interpret water quality in fish pond and how to maintain and improve it.
- b.2. Score fish health
- b.3. Discriminate bacterial & mycotic fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Collect & preserve of diagnostic specimens.
- c.2. Perform Clinical, post-mortem, bacteriological & mycological examinations of fish.
- c.3. Assess water & diet quality.
- c.4. Apply treatment of fish bacterial & mycotic diseases, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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.



Course specification of postgraduate

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to bacterial & mycotic diseases in fish	10	10	–
	- Scientific classification of bacterial & mycotic diseases of fish.	10	10	–
	-Bacterial diseases of fish	60	60	-
	-Mycotic diseases of fish	24	24	-
	-Fish necropsy	10	–	10
	-Water quality examination	20	–	20
	-Clinical diagnosis of bacterial & mycotic fish diseases	20	–	20
	-Laboratory diagnosis of bacterial & mycotic fish diseases	40	–	40
	-Prevention & control of bacterial & mycotic fish diseases	14	–	14
	Students activities -computer search& class presentations. -Field visits.	–	–	–
	Total	208	104	104

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a1- a2	b3		
- Practical examination		b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5



Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947
- Bacterial fish pathogens, 4th edition, 2007 (B. Austin.& D.A.Austin)

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

8.3. Recommended books

-Bacterial pathogens

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases



Beni-Suef University
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Course specification of postgraduate

- **Fish & shellfish immunology**
- **Journal of fish pathology**
- **Fish and fisheries journal**
- **Journal of fish biology**
- **Journal of shellfish research**
- **Canadian Journal of fisheries & aquatic sciences**
- **Veterinary pathology and Immunopathology**
- **Journal of aquatic animal health**
- **Turkish journal of fisheries and aquatic science**

Websites

- **WWW.fishyfarmacy.com/Symptom**
- **WWW.Aqualink.com/disease/s-**
- **WWW.aquatec-solutions.com**
- **WWW.aquatececo.com**
- **WWW.fishdisease.net**
- **WWW.nationalfishpharm.com**
- **WWW.kiovet.com**
- **WWW.nosickfish.com**
- **WWW.aquariumfish.com**
- **WWW.candyfish.net**

- **Course Coordinators**

Head of Department



Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction, stress & its relation to bacterial & mycotic diseases in fish	10	a.1	b.2		
2	- Scientific classification of bacterial & mycotic diseases of fish.	10	a.2		c.1, c.2	
3	-Bacterial diseases of fish	60	a.2			
4	-Mycotic diseases of fish	24	a.2		c.2	
5	-Fish necropsy	10	a.2	b.1	c.1	
6	-Water quality examination	20	a.2	b.2 & b.3	c.2	
7	-Clinical diagnosis of bacterial & mycotic fish diseases	20	a.2	b.3	c.1-c.2	
8	-Laboratory diagnosis of bacterial & mycotic fish diseases	40	a.2	b.3		d.4
9	-Prevention & control of bacterial & mycotic fish diseases	14	a.2		c.4	
	Total	208				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4



Course specification of postgraduate

1-Basic information

Course Code:	M-1 86
Course title :	Viral diseases of fish
Program title:	Master of fish diseases and management
Contact hours/ week	Lecture: 1 practical : 1 Total: 2
Approval Date	

2-Professional information

Overall aims of course:

The main purpose of this course is introducing the academic background and practical experience about keeping fishes in a state of good health.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a.1. Recall the relationship between fish health and aquatic environment.
- a.2. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of viral fish diseases.

b-Intellectual skills

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

- b.1. Interpret water quality in fish pond and how to maintain and improve it.
- b.2. Score fish health
- b.3. Discriminate viral fish diseases and suitable prevention & control measures.

c- Professional and practical skills

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

- c.1. Collect & preserve of diagnostic specimens.
- c.2. Perform Clinical, post-mortem and viralexaminations of fish.
- c.3. Assess water & diet quality.
- c.4. Apply treatment of fish viral diseases, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

- d.1. Use information technology & information resources.
- 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.



Course specification of postgraduate

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction, stress & its relation to viral diseases in fish	5	5	–
	- Scientific classification of viral diseases of fish.	5	5	–
	-Viral diseases of fish	42	42	-
	-Fish necropsy	5	–	5
	-Water quality examination	10	–	10
	-Clinical diagnosis of viral fish diseases	10	–	10
	-Laboratory diagnosis of viral fish diseases	20	–	20
	-Prevention & control of viral fish diseases	7	–	7
	Students activities -computer search& class presentations. -Field visits.	–	–	–
	Total	104	52	52

5-Teaching and learning methods

- 1- Lectures
- 2- Practical sections
- 3- Self learning (computer search & class presentations)
- 4-Field visits

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 examination	a1- a2	b3		
- Practical examination		b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3	c1- c2- c3- c4	d1-d2-d3- d4-d5



Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
- Written examination	- Week 54 th
- Practical examination	- week 53 th
- Oral examination	- week 54 th

7.3. Weight of assessments

Assessment	Weight of assessment
- Written examination	50%
- Practical examination	30%
- Oral examination	20%
- Total	100%

8- List of references

8.1. Notes and books

None

8.2. Essential books:

- Fish diseases & disorders, 1st Edition ,(Edited by P.T.K woo)
published by CAB international 1999, ISBN 0851991947

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

8.3. Recommended books

- 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
- Diseases of carp, 1st Edition, Published by Fishing news books, 2002,
ISBN 0-85238-252-9
- Applied fish pharmacology, 1st Edition,2000, Published by CBS, ISBN 0-412-62180-0

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

Journals:

- Journal of fish diseases
- Fish & shellfish immunology
- Journal of fish pathology



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Course specification of postgraduate

- **Fish and fisheries journal**
- **Journal of fish biology**
- **Journal of shellfish research**
- **Canadian Journal of fisheries & aquatic sciences**
- **Veterinary pathology and Immunopathology**
- **Journal of aquatic animal health**
- **Turkish journal of fisheries and aquatic science**

Websites

- **WWW.fishyfarmacy.com/Symptom**
- **WWW.Aqualink.com/disease/s-**
- **WWW.aquatec-solutions.com**
- **WWW.aquatececo.com**
- **WWW.fishdisease.net**
- **WWW.nationalfishpharm.com**
- **WWW.kiovet.com**
- **WWW.nosickfish.com**
- **WWW.aquariumfish.com**
- **WWW.candyfish.net**

- **Course Coordinators**

Head of Department



Beni Suef University
Faculty of Veterinary Medicine

Course specification

Topics		Hours	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
	Course description					
1	-Introduction, stress & its relation to viral diseases in fish	5	a.1	b.2		
2	- Scientific classification of viral diseases of fish.	5	a.2			
3	-Viral diseases of fish	42	a.2			
4	-Fish necropsy	5			c.2	
5	-Water quality examination	10	a.2	b.1	c.1	
6	-Clinical diagnosis of viral fish diseases	10	a.2	b.2 & b.3	c.2	
7	-Laboratory diagnosis of viral fish diseases	20	a.2	b.3	c.1-c.2	
8	-Prevention & control of viral fish diseases	7	a.2	b.3		
9	Total	104				
	Students activities:- -computer search & class presentations. -Field visits.					d.1-d.2-d.3-d.4-d.5