Beni-Suef University
Faculty of Veterinary Medicine
Fish department

Program Specification for Ph Degree
2017-2018

A-Basic information:
1- Program title: PhD VSC.
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- Recall the academic background and practical experience about the management of cultured fish and use efficiently the most recent techniques and improvement the skills of scientific research in field of fish diseases and management.

2- Help graduates be a member in a research project and increase their ability to engage critically with scientific literature and to present their own research data efficiently.

3- Making graduates aware about their role in community development and environment protection detect and solve the managerial problems based on scientific and research evidence regarding the national and international changes.

4- Write the dissertation, scientific papers and apply for scientific projects.

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. Recall the main principles of ichthyology and the design of fish farms according to the desired type(s) and fish species used.

a.2. Acquire the principles of using alternative methods concerning with artificial propagation of the cultured fish species in Egypt.

a.3. Recall the relationship between fish health and aquatic environment.

a.4. Differentiate causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.

a.5. Acquire the advanced concepts in fish behavior , management and other career related sciences.

a.6. Perform the managerial professional practices in fish farm.

a.7. Analyze the recent data associated with advanced researches in the field of fish diseases and management.

a.8. Identify efficiently the ethics in fish management.

a.9. Characterize quality principles and basics used 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. Standardize the most suitable cultured fish species in regard to culturing environment.

b.2. Master the water quality requirements in fish pond and how to maintain and improve it.

b.3. Create the suitable requirements for improving fish health.

b.4. Organize the suitable type(s) of fish farming, and suitable preventive and control measures of fish diseases.

b.5. Solve managerial problems with inadequacy of some resources.

b.6. Design a scientific research plan.

b.7. Identify , conceptualize and define research problems and questions , evaluate research data and develop new approach to solving research questions.

b.8. Develop creative approaches to solve technical problems or issues associate with running research projects.

b.9. Identify , summarize and evaluate previous research findings in a specific area of fish diseases and management.

c- Professional and practical skills:
On successful completion of this program the graduate should be able to:
c.1. Determine the most suitable cultivated fish species in regard to the environment.

c.2. Organize pond fertility according to cultivated fish species.

c.3. Prescribe, calculate and apply fish treatment trials on laboratory and field scale.

c.4. Select fish broad stock for natural and/or artificial propagation of selected fish species.

c.5. Perform clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish specimens.

c.6. Apply hygienic disposal of diseased fish & disinfection of fish culture facilities.

c.7. Apply the principles of good experimental design and analysis to their own research project and perform relevant statistical analysis on data obtained for their own research .

c.8. Write efficiently scientific paper and dissertation.

d- General and transferable skills:
On successful completion of this program the graduate should be able to:

d.1.Be a consultant for raising fish aquaculture technology.

d.2. Design research plans and projects.

d.3. Work in group.

d.4. Communicate with fish specialists.

d.5. Play a role in manipulation of national obstacles facing fish aquaculture industry.

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.**

> **a-Program duration: 48 weeks.**

> **b-Program structure: 3-5 preliminary courses**
>   ⊠ **Hours/ week:**

| **Theoretical** | 5-8 | **Practical** | 6-8 | **Total** | 11-16 |

Preliminary courses

Code	Course title	Hours /week	Academic	Teaching

		theoritical	practical	year	duration
According to selected courses	Selected (3-5) PhDcourses from the various Faculty Departments programs depending on the thesis title.	5-8	6-8	Preliminary year	36 weeks

D- Courses contents
 See courses specification

5- Program Admission Requirements

* **According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have a master degree in the specialization subject he will register in one of the Egyptian Universities or an equivalent degree from any approved university or another recognized scientific institute.**

* **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)

* **Admission to the program is open during March and September annually.**

***The faculty council has the right to suspend the student enrolment for a certain period if he has acceptable excuse preventing him from continuing his study or research.**

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 course teaching hours/ week	Allowed written examined time	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .
-Failure or depriving from entering one or more course did not requires reexamination of successful passed courses.
-The applicant should submit a seminar within 2years after registration about his research and specialization subject filed that accepted by a committee of professors and assistant professors(3 in number).
-the applicant should submit the thesis that accepted by the judging committee in an open discussion and the following polices should be met:
-pass all preliminary curriculums successfully.
-acceptance of the seminar presented by the applicant.
-The applicant should publish at least two scientific papers from the thesis in local or international journals

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 Ph.D. 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.

7-Graduate student assessment

A: Assessment Tools
According the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate, students should be assessed at the end of preliminary year and the thesis should be evaluated and approved by a committee after at least three years from registration date according to University regulations.
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

Ph.D. Thesis:

The Ph.D. students should prepare a thesis in fish diseases and management. The department and the ethical committees must approve the protocol of the research. The thesis includes a review part with a practical part. The thesis is supervised by two 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.

B- Matrix alignment of the measured ILOs

8- Evaluation of Program Intended Learning Outcomes

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
Written exam	5,7,8	1,3,6	1,2,4,5,6,	-----
Practical exam	1,2,3,4,	3,4,5,6,	1.2.3.4.6.	1.2.3.4
Oral exam	1,2,3,4,5	1,2,4,5,6,	1.7	1,2,3,4

Evaluator	Tool	Sample
1. Post graduate Students	Questionnaire at the end of the program	All the PG students
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation annual report
5. College Quality Assurance committee	Annual program reviewer	

Course coordinator   Head of the Department

PhD 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	a2	a3	a4	a5	b1	b2	b3	b4	b5	b6	b7	b8	b9	c1	c2	c3	c4	c5	d1	d2	d3	d4	d5	d6	d7
Knowledge and understanding	a1	X																									
	a2				X	X																					
	a3	X				X																					
	a4				X	X																					
	a5	X		X																							
	a6																										
	a7			X																							
	a8		X	X																							
	a9		X																								
	a10				X																						
Intellectual skills	b1						X																				
	b2												X		X												
	b3										X																
	b4										X																
	b5							X			X	X			X												
	b6								X			X															
	b7							X						X													
	b8								X	X																	
	b9								X				X	X													
	b10						X			X																	
Professional	c1															X											

and practical skills	c2												X		X										
	c3														X										
	c4														X										
	c5															X									
	c6															X									
	c7															X									
	c8													X			X								
	c9													X											
General and transferable skills	d1																		X				X	X
	d2																		X					X
	d3																				X	X		X
	d4																		X		X	X	X	X
	d5																		X					X

PhD Program Specification Matrix (Program Courses with ILOS)

Program ILOs		courses
Knowledge and understanding	**a1**	**Ph-11, Ph-22, Ph-25**
	a2	**Ph-211**
	a3	**Ph-179, Ph-211**
	a4	**Ph179-Ph183 (180)**
	a5	**Ph179 -Ph180- Ph181- Ph182- Ph183**
	a6	**Ph-179, Ph-41**
	a7	**Ph-183,Ph-211**
	a8	**Ph-179,Ph-180,Ph-181,Ph-182,Ph-183,Ph-184,Ph-185,Ph-186**
	a9	**Ph-179,Ph-211**
	a10	**Ph-211,Thesis**
Intellectual skills	**b1**	**Ph-211**

	b2	Ph-183, Ph-211
	b3	Ph-51, Ph-211
	b4	Ph-183, Ph-211
	b5	Ph-183, Ph-211
	b6	Thesis
	b7	Thesis
	b8	Thesis
	b9	Ph-183,Ph-211,Thesis
	b10	Thesis
Professional and practical skills	c1	Ph-211
	c2	Ph-25,Ph-41, Ph-183,Ph-211
	c3	Ph-67, Ph-180, Ph-183
	c4	Ph-211
	c5	Ph179, Ph-85,Ph-180, Ph-181, Ph-182, Ph-183,Ph-184 ,Ph-97
	c6	Ph-183
	c7	Thesis
	c8	Thesis
	c9	Thesis
General and transferable skills	d1	Ph-179,Ph-183,Ph-211,Thesis
	d2	

		Thesis
	d3	Ph-179, Thesis
	d4	Ph-183, Thesis
	d5	Ph179, Ph-180, Ph-181, Ph-182, Ph-183,Ph-184 , Ph-211

Program aims – ILOS Matrix for the PhD program (PhD VSC)
مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

Program aims		Program aims			
Program ILOS		1.1.Recall the academic background and practical experience about the management of cultured fish and use efficiently the most recent techniques and improvement the skills of scientific research in field of fish diseases and management.	1.2. Help graduates be a member in a research project and increase their ability to engage critically with scientific literature and to present their own research data efficiently.	1.3. Making graduates aware about their role in community development and environment protection detect and solve the managerial problems based on scientific and research evidence regarding the national and international changes.	1.4. Write the dissertation, scientific papers and apply for scientific projects.
edge and under	a.1. Recall the main principles of ichthyology	√			√

13

and the design of fish farms according to the desired type(s) and fish species used.				
a.2 Acquire the principles of using alternative methods concerning with artificial propagation of the cultured fish species in Egypt.	√		√	
a.3 Recall the relationship between fish health and aquatic environment.	√		√	
a.4 Differentiate causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.	√			
a.5. Acquire the advanced concepts in fish behavior , management and other career related sciences	√			√
a.6 . Perform the managerial professional practices in fish farm.		√	√	
a.7. Analyze the recent data associated with advanced researches in		√		√

	the field of fish diseases and management.				
	a.8. Identify efficiently the ethics in fish management.		√	√	
	a.9. Characterize quality principles and basics used in the field of fish diseases and management.		√	√	
Intellectual skills	b.1. Standardize the most suitable cultured fish species in regard to culturing environment.	√			
	b.2. Master the water quality requirements in fish pond and how to maintain and improve it.			√	
	b.3. Create the suitable requirements for improving fish health.	√			
	b.4. Organize the suitable type(s) of fish farming, and suitable preventive and control measures of fish diseases.		√	√	√
	b.5. Solve managerial problems with inadequacy of some resources.			√	

	b.6. Design a scientific research plan.				√
	b.7. Identify , conceptualize and define research problems and questions , evaluate research data and develop new approach to solving research questions.			√	
	b.8. Develop creative approaches to solve technical problems or issues associate with running research projects.		√	√	
	b.9. Identify , summarize and evaluate previous research findings in a specific area of fish diseases and management.				√
c- Professio nal and practical skills	c.1. Determine the most suitable cultivated fish species in regard to the environment.	√			

	c.2. Organize pond fertility according to cultivated fish species.		√	√	
	c.3. Prescribe, calculate and apply fish treatment trials on laboratory and field scale.			√	√
	c.4. Select sh broad stock for natural and/or artificial propagation of selected fish species.		√	√	
	c.5. Perform clinical, post-mortem, parasitological, bacteriological, mycological & virological examinations of fish specimens.	√			
	c.6. Apply hygienic disposal of diseased fish & disinfection of fish culture facilities.			√	
	c.7. Apply the principles of good experimental design and analysis to their own research project and perform relevant statistical analysis on data obtained for their own research		√		√

	c.8. Write efficiently scientific paper and dissertation.				√
General and transferable skills	d.1.Be a consultant for raising fish aquaculture technology.		√	√	
	d.2. Design research plans and projects.		√	√	
	d.3. Work in group.		√		
	d.4. Communicate with fish specialists.			√	
	d.5. Play a role in manipulation of national obstacles facing fish aquaculture industry		√	√	

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information	

Course Code:	Ph- 179
Course title :	Fish Diseases & Management of freshwater fish
Program title:	Doctor of philosophy (PhD) 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. Recall the main principles of ichthyology.

a.2. Design fish farms according to the desired type(s) and fish species used.

a.3. Acquire the principles of using alternative methods concerning with artificial propagation of the cultured fish species in Egypt.

a.4. Asses the most suitable requirements for aquatic environment in relation to the site , freshwater fish species and natural water resources.

a.5. Master the most recent technologies used in studying 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. Standardize the most suitable cultured fish species in regard to culturing environment.

b.2. Master the water quality requirements in fish pond and how to maintain and improve it.

b.3. Create the suitable requirements for improving fish health.

b.4. Organize the suitable type(s) of fish farming, and suitable preventive and control measures of fish diseases.

b.5. Solve managerial problems with inadequacy of some resources.

b.6. Design a scientific research plan.

b.7. Develop creative approaches to solve technical problems or issues associate with running research projects.

c- Professional and practical skills

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

c.1. Determine the most suitable cultivated fish species in regard to the environment.

c.2. Perform clinical, post-mortem, parasitological, bacteriological, mycological &

Course specification of postgraduate

virological investigations of fish specimens.

c.3. Perform Fish acclimation, feeding, anesthesia, harvesting , sorting and transportation

c.4. Select the most suitable methods for improving the growth using sex reversal technology.

c.5. Apply the recent advances for make use of diagnostic specimens.

c.6. Acquire the professional requirements to easily perform clinical, post-mortem, parasitological, bacteriological, mycological & virological investigations of diseased freshwater fish.

c.7. standardize water & diet requirement for freshwater fish.

c.8. Prescribe, calculate and prepare treatment formulations, hygienic disposal of diseased fish & disinfection of fish culture facilities.

d- General and transferable skills

The student graduate be able to

d.1. Be a consultant for raising fish aquaculture technology.

d.2. Design research plans and projects.

d.3. Work in group.

d.4. Communicate with fish specialists.

d.5. Play a role in manipulation of national obstacles facing fish aquaculture industry.

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction; the roles of different stressor for disease occurrences in freshwater fish.	10	10	_
	-Advanced aspects of parasitic diseases of freshwater fish.	24	24	-
	- Advanced aspects of bacterial diseases of freshwater fish.	24	24	_
	- Advanced aspects of mycotic diseases of freshwater fish.	18	18	_
	- Advanced aspects of viral diseases of freshwater fish.	13	13	_
	- Advanced aspects of non infectious diseases of freshwater fish.	15	15	_
	-Special anatomy and applied physiology of freshwater fish.	20	_	20
	- Special fish classification	5	_	5
	-Fish autopsy and necropsy	8	_	8
	-Advanced methods and tools in water quality examinations.	20	_	20

Course specification of postgraduate

	-Recent advances in fish farming	20	_	20
	-Recent technologies for propagation of cultured freshwater fish.	5	–	5
	-Pathognomonic clinical signs of freshwater fish diseases.	8	–	8
	-Recent techniques in laboratory diagnosis of freshwater fish diseases.	8	–	8
	-Recent methods used for 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**

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	a3	b1- b2- b3- b5-b7	c1- c2- c3- c4-c5-c6- c7-c8	d1-d2-d3- d4-d5
- Oral examination	a1- a2	b1- b2- b3- b6	c1- c2- c3- c4	d1-d2-d3- d4-d5

7.2. Assessment schedules

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

7.3. Weight of assessments

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

3

Course specification of postgraduate

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**

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**

Course specification of postgraduate

- **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; the roles of different stressor for disease occurrences in freshwater fish.	**10**	a.1-a.3			
2	-Advanced aspects of parasitic diseases of freshwater fish.	**24**	a.5		c.1, c.2	
3	- Advanced aspects of bacterial diseases of freshwater fish.	**24**	a.5			
4	- Advanced aspects of mycotic diseases of freshwater fish.	**18**	a.5			
5	- Advanced aspects of viral diseases of freshwater fish.	**13**	a.1			
6	- Advanced aspects of non infectious diseases of freshwater fish.	**15**	a.4-a.5	b.3-b.4	C2-c3-c4	
7	-Special anatomy and applied physiology of freshwater fish.	**20**			c.6	
8	- Special fish classification	**5**	a.2	b.2	c.1	
9	-Fish autopsy and necropsy	**8**	a.2-a.6	b.3	c.1	
10	-Advanced methods and tools in water quality examinations.	**20**	a.3		c.3-c.4	
11	-Recent advances in fish farming	**20**	a5	b4	c.6	
12	-Recent technologies for propagation of cultured freshwater fish.	**5**	a5	b4	c.5c.6	
13	-Pathognomonic clinical signs of freshwater fish diseases.	**8**	a.3		c.3.c4.c5	
14	-Recent techniques in laboratory diagnosis of freshwater fish diseases.	**8**	a.5	b4	c.8	
15	-Recent methods used for 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:	Ph- 180
Course title :	Fish Diseases & Management of marine water fish
Program title:	Doctor of philosophy (PhD) 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. Recall the main principles of ichthyology of marine water.
   a.2. Design fish farms according to the desired type(s) of marine fish species used.
   a.3. Acquire the principles of using alternative methods concerning with artificial propagation of the cultured marine fish species in Egypt.
   a.4. Asses the most suitable requirements for aquatic environment in relation to the site , marinewater fish species and natural water resources.
   a.5. Master the most recent technologies used in studying 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. Standardize the most suitable cultured fish species in regard to marine culturing environment.
b.2. Master the water quality requirements in marine fish pond, how to maintain and improve it.
b.3. Create the suitable requirements for improving marine fish health.
b.4. Organize the suitable type(s) of marine fish farming, and suitable preventive and control measures of their diseases.
b.5. Solve managerial problems with inadequacy of some resources.
b.6. Design a scientific research plan.
b.7. Develop creative approaches to solve technical problems or issues associate with running research projects.

c- Professional and practical skills
 By the end of studying this course, the student should be able to:-
c.1. Determine the most suitable cultivated fish species in regard to marine environment.
c.2. Perform clinical, post-mortem, parasitological, bacteriological, mycological &

Course specification of postgraduate

virological investigations of marine fish specimens.

c.3. Perform marine fish acclimation, feeding, anesthesia, harvesting , sorting and transportation

c.4. Select the most suitable methods for improving the growth of cultured marine fish species using available technology.

c.5. Apply the recent advances for make use of diagnostic marine fish specimens.

c.6. Acquire the professional requirements to easily perform laboratory examination of diseased marinewater fish.

c.7. Standardize water & diet requirement for marine water fish.

c.8. Prescribe, calculate and prepare treatment formulations, hygienic disposal of diseased fish & disinfection of marine fish culture facilities.

d- General and transferable skills

The student graduate be able to

d.1. Be a consultant for raising marine fish aquaculture technology.

d.2. Design research plans and projects.

d.3. Work in group.

d.4. Communicate with marine fish specialists.

d.5. Play a role in manipulation of national obstacles facing marine fish aquaculture industry.

4-Topics and contents

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	-Introduction; the roles of different stressor for disease occurrences in marine fish.	10	10	_
	-Advanced aspects of parasitic diseases of marine fish.	24	24	-
	- Advanced aspects of bacterial diseases of marine fish.	24	24	_
	- Advanced aspects of mycotic diseases of marine fish.	18	18	_
	- Advanced aspects of viral diseases of marine fish.	13	13	_
	- Advanced aspects of non infectious diseases of marine fish.	15	15	_
	-Special anatomy and applied physiology of marine fish.	20	_	20
	- Special marine fish classification	5	_	5
	- Marine fish autopsy and necropsy	8	_	8
	-Advanced methods and tools in marine water quality examinations.	20	_	20

Course specification of postgraduate

	-Recent advances in marine fish farming	20	–	20
	-Recent technologies for propagation of cultured marine fish.	5	–	5
	-Pathognomonic clinical signs of marine fish diseases.	8	–	8
	-Recent techniques in laboratory diagnosis of marine fish diseases.	8	–	8
	-Recent methods used for 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**

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	a3	b1- b2- b3-b5-b7	c1- c2- c3-c4-c5-c6-c7-c8	d1-d2-d3-d4-d5
- Oral examination	a1- a2	b1- b2- b3-b6	c1- c2- c3-c4	d1-d2-d3-d4-d5

7.2. Assessment schedules

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

7.3. Weight of assessments

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

Course specification of postgraduate

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, 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**

Course specification of postgraduate

- **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; the roles of different stressor for disease occurrences in marine fish.	**10**	a.1-a.3			
2	-Advanced aspects of parasitic diseases of marine fish.	**24**	a.5		c.1, c.2	
3	- Advanced aspects of bacterial diseases of marine fish.	**24**	a.5			
4	- Advanced aspects of mycotic diseases of marine fish.	**18**	a.5			
5	- Advanced aspects of viral diseases of marine fish.	**13**	a.1			
6	- Advanced aspects of non infectious diseases of marine fish.	**15**	a.4-a.5	b.3-b.4	C2-c3-c4	
7	-Special anatomy and applied physiology of marine fish.	**20**			c.6	
8	- Special marine fish classification	**5**	a.2	b.2	c.1	
9	- Marine fish autopsy and necropsy	**8**	a.2-a.6	b.3	c.1	
10	-Advanced methods and tools in marine water quality examinations.	**20**	a.3		c.3-c.4	
11	-Recent advances in marine fish farming	**20**	a5	b4	c.6	
12	-Recent technologies for propagation of cultured marine fish.	**5**	a5	b4	c.5c.6	
13	-Pathognomonic clinical signs of marine fish diseases.	**8**	a.3		c.3.c4.c5	
14	-Recent techniques in laboratory diagnosis of marine fish diseases.	**8**	a.5	b4	c.8	
15	-Recent methods used for 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:	Ph- 181
Course title :	Crustaceans Diseases & Management
Program title:	Doctor of philosophy (Ph) 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. Differentiate among the most cultural crustaceans, particularly, in Egypt.

a.2. Establish and carry out the suitable crustaceans farm designs and their management.

a.3. Master the most suitable techniques for artificial propagation of the crustaceans species in Egypt.

a.4. Improve raising healthy crustaceans in available aquatic environment.

a.5. Establish the most recent technologies used in studying 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. Select the most suitable crustaceans species for culturing in Egyptian environment.

b.2. Stabilize the water quality requirements in crustaceans pond and how to maintain and improve it.

b.3. Acquire the most suitable techniques to improve crustaceans health.

b.4. Categorize types of suitable 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. Qualify the main risk factors facing cultural crustaceans species in Egyptian environment.

c.2. Regulate the managerial requirements for raising crustaceans.

c.3. Mange the different production cycles for raising crustaceans.

c.4. Select the crustaceans brood stock for their propagation.

c.5. Apply the recent advances for make use of diagnostic crustaceans specimens.

Course specification of postgraduate

c.6. Acquire the professional requirements to easily perform clinical, post-mortem, parasitological, bacteriological, mycological & virological investigations of diseased crustaceans.

c.7. Standardize water & diet requirements for raising selected crustaceans.

c.8. Prescribe, calculate and prepare treatment formulations, hygienic disposal of diseased crustaceans and disinfection of their cultural 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; the roles of different stressor for disease occurrences in crustaceans.	5	5	_	
	-Advanced aspects of parasitic diseases of crustaceans.	12	12	-	
	- Advanced aspects of bacterial diseases of crustaceans.	6	6	_	
	- Advanced aspects of mycotic diseases of crustaceans.	9	9	_	
	- Advanced aspects of viral diseases of crustaceans.	12	12	_	
	- Advanced aspects of non infectious diseases of crustaceans.	7	7	_	
	-Special anatomy and applied physiology of crustaceans.	10	_	10	
	- Special crustaceans classification	2	_	2	
	- Crustaceans autopsy and necropsy	4	_	4	
	-Advanced methods and tools in water quality examinations.	10	_	10	
	-Recent advances in crustaceans farming	10	_	10	
	-Recent technologies for propagation of crustaceans.	3	_	3	
	-Pathognomonic clinical signs of crustaceans diseases.	4	_	4	
	-Recent techniques in laboratory diagnosis of crustaceans diseases.	4	_	4	

Course specification of postgraduate

	-Recent methods used for prevention &control of crustaceans diseases	5	–	5
	-Field visits. - Assignments. -Presentations.	–	–	
	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	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 54th
- Practical examination	- week 53th
- Oral examination	- week 54th

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

Course specification of postgraduate

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**

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 specification of postgraduate

- 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; the roles of different stressor for disease occurrences in crustaceans.	**5**	a.1-a.4		c.1, c.2	
3	-Advanced aspects of parasitic diseases of crustaceans.	**12**	a.2			
4	- Advanced aspects of bacterial diseases of crustaceans.	**6**	a.5			
5	- Advanced aspects of mycotic diseases of crustaceans.	**9**	a.5			
6	- Advanced aspects of viral diseases of crustaceans.	**12**	a.5			
7	- Advanced aspects of non infectious diseases of crustaceans.	**7**	a.4-a.5			
8	-Special anatomy and applied physiology of crustaceans.	**10**	a.1			
9	- Special crustaceans classification	**2**	a.1	b.1-b.5		
10	- Crustaceans autopsy and necropsy	**4**				
11	-Advanced methods and tools in water quality examinations.	**10**	a2	b2		
12	-Recent advances in crustaceans farming	**10**	a2	b4	c.1-c2-c3-c4	
13	-Recent technologies for propagation of crustaceans.	**3**	a.3		c.3.c4.c5	
14	-Pathognomonic clinical signs of crustaceans diseases.	**4**	a.5	b.3-b4	c.6	
15	-Recent techniques in laboratory diagnosis of crustaceans diseases.	**4**	a.5	b3-b4	c.6	
16	-Recent methods used for prevention &control of crustaceans diseases	**5**	a.5	b4	c.5-c.6	
	-Field visits. - Assignments. -Presentations.	**104**				d.1-d.2-d.3-d.4

Course specification of postgraduate

1-Basic information	

Course Code:	Ph- 182
Course title :	Diseases of environmental pollution & toxicity in fish
Program title:	Doctor of philosophy (PhD) 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. Identify efficiently the ethics of fish health, management and aquatic environment.
  a.2. Acquire the advanced concepts in fish behavior, management and other career related to environmental pollution and/or fish toxicity.
  a.3. Describe causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish toxicity.
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. Organize the suitable type(s) of fish farming, site, and suitable water resources.
b.3. Discriminate fish toxicity, environmental pollution 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. . Create the suitable requirements for improving fish health.
 c.3. Perform the managerial professional practices in fish farm, water and diet quality.
 c.4. Analyze the recent data associated with advanced researches in the field of fish and management, water pollution and fish toxicity
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.

Course specification of postgraduate

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; biological indicators of pollution & chemical toxicity in fish.	10	10	_
	- Aspects of Classification & scientific identification of biological indicators in aquatic environment.	30	30	_
	- Differentiation of types of pollution indicators & its importance in early diagnosis of toxicity diseases in fish.	34	34	_
	- General and specific side effects of pollutants in wild and cultured fish.	30	30	_
	- Advanced methods and tools in water quality examinations	10	_	10
	- Pathognomonic clinical signs and diagnosis of pollution & chemical toxicity in fish.	10	_	10
	- Recent techniques in laboratory diagnostic aids and tools for diagnosis and chemical and biological toxicity in fish.	10	_	10
	-Recent techniques for prevention & control of water pollution and fish toxicity.	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:

Course specification of postgraduate

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
- **Written examination**	a1- a2- a3	b1-b2-b3		
- **Practical examination**	a1- a2- a3	b1- b2- b3-b.4	c1- c2- c3-c4	d1-d2-d3-d4-d5
- **Oral examination**	a1- a2- a3	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]

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, 1**[st] **Edition ,(Edited by P.T.K woo)
  published by CAB international 1999, ISBN 0851991947**
- **Aquaculture farming aquatic animals and plants ,3**[rd] **Edition ,Edited by John slucas
  and Paulc Southgate, published by Black well publishing 2003 ,ISBN 0-85238-222-7**
- **Bacterial fish pathogens, 4**[th] **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, 1**[st] **Edition, (Michael K.Stoskopf,D.v.m.)
  Published by W.B. Saunders Company 1996,ISBN 0-7216-2629-7**
- **Fish diseases diagnosis and treatment ,1**[st] **Edition, (Edward j.noga)
  Published by Mosby. Year Book1996, Editor: Lindal.Duncan,
  ISBN 1-55664-374-8**
- **Diseases of carp, 1**[st] **Edition, Published by Fishing news books, 2002,
  ISBN 0-85238-252-9**

Course specification of postgraduate

- **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; biological indicators of pollution & chemical toxicity in fish.**	**10**	a.1			
2	**- Aspects of Classification & scientific identification of biological indicators in aquatic environment.**	**28**	a.1- a.3			
3	**- Differentiation of types of pollution indicators & its importance in early diagnosis of toxicity diseases in fish.**	**27**	a.1	b.2		
4	**- General and specific side effects of pollutants in wild and cultured fish.**	**15**	a.1	b.2		
5	**- Advanced methods and tools in water quality examinations**	**12**	a.1	b.1	c.3	
6	**- Pathognomonic clinical signs and diagnosis of pollution & chemical toxicity in fish.**	**12**	a.2- a.3	b.2-b.3	C2	
7	**- Recent techniques in laboratory diagnostic aids and tools for diagnosis and chemical and biological toxicity in fish.**	**10**	a.2	b.3	C1-c2	
8	**-Recent techniques for prevention & control of water pollution and fish toxicity.**	**10**	a.2- a.3	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**

5

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph- 183
Course title :	Principals of diseases control in fish farm
Program title:	Doctor of philosophy (PhD) 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. Characterize quality principles and basics used in the field of fish diseases and management.

  a.2. Differentiate causes, epizootiology, pathogenesis, diagnosis, prevention and control of fish diseases.

  a.3. Organize and perform the managerial professional practices responsible for fish diseases prevention and control.

b-Intellectual skills

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

b.1. Master the water quality requirements in fish farm, how to maintain and improve it.

b.2. Acquire the principles of using alternative methods concerning with fish health and diseases prevention and control.

b.3. Solve managerial problems with inadequacy of most causes of fish diseases and other resources.

c- Professional and practical skills

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

 c.**1. Determine the most suitable method for control and /or prevention of fish diseases.**

c.2. Prescribe, calculate and apply fish treatment trials on laboratory and field scales.

c.3. Assess water & diet quality.

c.**4. Apply fish 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.

Course specification of postgraduate

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; handling of diseased problems in fish farm.	10	10	_
	- Advanced, specific and alternatives concepts of controlling fish parasitic diseases.	28	28	_
	- Advanced, specific and alternatives concepts of controlling and/or prevention of bacterial fish diseases.	27	27	_
	- Advanced, specific and alternatives concepts of controlling and/or prevention of mycotic fish diseases	15	15	_
	- Advanced, specific and alternatives concepts of prevention of viral fish diseases.	12	12	_
	- Advanced, specific and alternatives concepts of controlling and/or prevention of non infectious fish diseases	12	12	_
	- Advanced methods and tools in water quality examinations.	10	_	10
	-Differentiation of pathognomonic clinical signs of fish diseases clinical signs.	10	_	10
	- Recent techniques in laboratory diagnosis of fish diseases.	10	_	10
	- Recent methods used for 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**

Course specification of postgraduate

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- a3	b1-b2-b3		
- Practical examination	a1- a2- a3	b1- b2- b3- b.4	c1- c2- c3- c4	d1-d2-d3-d4-d5
- Oral examination	a1- a2 - a3	b1- b2- b3		

7.2. Assessment schedules

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

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)**

Course specification of postgraduate

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

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; handling of diseased problems in fish farm.**	**10**	a.1	b.1-b.2-b.3		
2	- **Advanced, specific and alternatives concepts of controlling fish parasitic diseases.**	**28**	a.2	b.1-b.2-b.3		
3	- **Advanced, specific and alternatives concepts of controlling and/or prevention of bacterial fish diseases.**	**27**	a.2	b.1-b.2-b.3		
4	- **Advanced, specific and alternatives concepts of controlling and/or prevention of mycotic fish diseases**	**15**	a.2	b.1-b.2-b.3		
5	- **Advanced, specific and alternatives concepts of prevention of viral fish diseases.**	**12**	a.2	b.1-b.2-b.3		
6	- **Advanced, specific and alternatives concepts of controlling and/or prevention of non infectious fish diseases**	**12**	a.2	b.1-b.2-b.3		
7	**- Advanced methods and tools in water quality examinations.**	**10**	a.1	b.1	c.3	
8	**-Differentiation of pathognomonic clinical signs of fish diseases clinical signs.**	**10**	a.2	b.2-b.3	c.2.	**d.4**
9	**- Recent techniques in laboratory diagnosis of fish diseases.**	**10**	a.2	b.3	c.2-c.3	
10	**- Recent methods used for 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**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information	

Course Code:	Ph- 184
Course title :	parasitic diseases of fish
Program title:	Doctor of philosophy (PhD) 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 parasitological investigation fundamentals of aquatic environment origin.

  a.2. Master the most recent technologies used in studying 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. Standardize the water quality requirements of fish pond, how to maintain and improve it.

b.2. Organize the suitable requirements for preventive and control measures of fish parasitic diseases.

b.3. Solve managerial problems associated with parasitic fish diseases occurrence with 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. Acquire the professional requirements to easily perform clinical, post-mortem, parasitological as well as laboratory examinations of fish parasitic diseases.

 c.3. Standardize water & diet requirements as preventive measures for parasitic fish diseases.

 c**.4. Prescribe, calculate and prepare treatment formulations, 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.

Course specification of postgraduate

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, the roles of different stressor for parasitic diseases occurrence.	10	10	_
	- Scientific classification of parasitic diseases of fish.	10	10	_
	- Advanced aspects of parasitic diseases of fish.	84	84	-
	-Fish autopsy and necropsy	10	_	10
	- Advanced methods and tools in water quality examinations and improvements.	20	_	20
	- Pathognomonic clinical signs for diagnosis of parasitic fish diseases	20	_	20
	- Recent techniques in laboratory diagnosis of of parasitic fish diseases	40	_	40
	- Advanced methods and tools in 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-	d1-d2-d3-

Course specification of postgraduate

			c4	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 54th
- Practical examination	- week 53th
- Oral examination	- week 54th

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:

Course specification of postgraduate

- **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
	Course description					
1	-Introduction, the roles of different stressor for parasitic diseases occurrence.	**10**	a.1	b.2		
2	- Scientific classification of parasitic diseases of fish.	**10**	a.2			
3	- Advanced aspects of parasitic diseases of fish.	**84**	a.2			
4	-Fish autopsy and necropsy	**10**			c.2	
5	- Advanced methods and tools in water quality examinations and improvements.	**20**	a.2	b.1	c.1	
6	- Pathognomonic clinical signs for diagnosis of parasitic fish diseases	**20**	a.2	b.2 &b.3	c.2	
7	- Recent techniques in laboratory diagnosis of of parasitic fish diseases	**40**	a.2	b.3	c.1-c.2	
8	- Advanced methods and tools in 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:	Ph- 185
Course title :	Bacterial & mycotic diseases of fish
Program title:	Doctor of philosophy (PhD) 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. Master the most recent technologies used in studying 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. Standardize the most suitable water quality in fish pond and how to maintain and improve it.

b.2. Develop creative approaches to solve technical problems or issues associate with bacterial and/or mycotic fish diseases.

b.3. Organize the most suitable prevention & control measures of bacterial & mycotic fish diseases.

b.4. Design a scientific research plan.

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. Acquire the professional requirements to easily perform clinical, post-mortem bacteriological & mycological investigation of diseased fish.

  c.3. Assess water & diet quality to improve fish heath against infection with bacterial and /or mycotic diseases.

 c**.4. Prescribe, calculate and prepare treatment formulations for fish bacterial & mycotic diseases, hygienic disposal of diseased fish as well as the disinfection requirements for 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.

Course specification of postgraduate

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; the roles of different stressor in relation to bacterial & mycotic disease occurrences 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 autopsy and 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-	d1-d2-d3-

Course specification of postgraduate

			c4	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 54th
- Practical examination	- week 53th
- Oral examination	- week 54th

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**

Course specification of postgraduate

*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; the roles of different stressor in relation to bacterial & mycotic disease occurrences 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 autopsy and 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**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-1 86
Course title :	Viral diseases of fish
Program title:	Doctor of philosophy (PhD) 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. Master the most recent technologies used in studying epizootiology, pathogenesis, diagnosis, prevention and control of fish viral 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. Develop creative approaches to solve technical problems or issues associate with 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. Acquire the professional requirements to easily perform clinical, post-mortem and viral investigation of affected diseased fish.

c.3. Assess water & diet quality to improve fish heath against infection with viral diseases.

 c**.4. Apply hygienic disposal of viral 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.

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

Course	Topic	No. of hours	Lectures (hours)	Practical (hours)
(Lec. h./week, Pract. h./week)	- **Introduction; the roles of different stressor in relation to viral disease occurrences in fish**	5	5	_
	- **Scientific classification of viral diseases of fish.**	5	5	_
	- **Recent advances in viral diseases of fish**	42	42	-
	-**Fish autopsy and necropsy**	5	_	5
	- **Advanced methods and tools in water quality examinations.**	10	_	10
	- **Pathognomonic clinical signs of fish viral diseases.**	10	_	10
	-**Recent techniques in laboratory diagnosis of fish viral diseases.**	20	_	20
	-**Recent methods used for prevention of fish viral 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 54th
- Practical examination	- week 53th
- Oral examination	- week 54th

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:

Course specification of postgraduate

- **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
	Course description					
1	**- Introduction; the roles of different stressor in relation to viral disease occurrences in fish**	**5**	a.1	b.2		
2	**- Scientific classification of viral diseases of fish.**	**5**	a.2			
3	**- Recent advances in viral diseases of fish**	**42**	a.2			
4	**-Fish autopsy and necropsy**	**5**			c.2	
5	**- Advanced methods and tools in water quality examinations.**	**10**	a.2	b.1	c.1	
6	**- Pathognomonic clinical signs of fish viral diseases.**	**10**	a.2	b.2 &b.3	c.2	
7	**-Recent techniques in laboratory diagnosis of fish viral diseases.**	**20**	a.2	b.3	c.1-c.2	
8	**-Recent methods used for prevention of fish viral 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**