Specification for Aquatic animals Diseases course

2025/2026

1-Basic information

1.	**Course title**	Aquatic Animals Diseases and Management (Aquatic animal Diseases and Management)							
2.	**Course code**	**515 (B) II**							
3.	**Department offering the course**	Aquatic Animals medicine							
4.	**Number of hours**	**Theoretical**	**2**	**Practical**	**2**	**Other**	**0**	**Total**	**4**
5.	**Course Type**	√ **Obligatory** **Elective**							
6.	**Level**	5th year							
7.	**Semester**	Second semester							
8.	**Academic program**	Bachelor Veterinary medicine (BVM)							
9.	**Faculty**	Faculty of Veterinary medicine							
10.	**University**	Benha University							
11.	**Name of course coordinator**	Prof. Dr. Amel El Asely							
12.	**Course Specification Approval Date**	Faculty council/ 27-8-2025							
13.	**Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)**	Department council/ 5-8-2025							

2-Course overview

- **Course contents written in the program bylaw:**
  Fish and shellfish diseases caused by bacterial pathogens; Fish and shellfish diseases caused by parasitic pathogens; Fish and shellfish diseases caused by viral pathogens; Fish and shellfish diseases caused by mycotic pathogens; Diagnosis of Fish diseases; control of Fish diseases (chemotherapy, immunostimulant, vaccination); diagnosis of shellfish diseases; control of shellfish diseases (chemotherapy and immunostimulants).

3- Intended learning outcomes of the course (ILOs):

	NARS ILOS		Course ILOS	
	Code	**Text**	**Code**	**Text**
Knowledge and Understanding	**2.11**	The most appropriate diagnosis and differential diagnosis of animals, poultry and aquatic diseases	**a1**	Describe principles of microbiology and microbial diseases as well as parasitology and parasitic diseases
			a2	Identify Fish health conditions and biosecurity measures.
			a3	Mention the Causes of infectious fish diseases and epizootiology of diseases.
			a4	List Appropriate methods for diagnosis and differential diagnosis of fish diseases.
			a5	Describe the economic impact of fish diseases and methods available for prevention and control.
			a6	Mention Veterinary therapy and principles of their uses in aquaculture.
	2.12.	The accurate measurements of veterinary quarantine.	**a7**	Identify Ecological diseases and appropriate methods for management and control.
Intellectual skills	**4.3.**	Inculcate a rigorous approach to problem identification and solving.	**b1**	Develop problem lists and differential diagnosis to reach appropriate solutions and control of the clinical diseases.
	4.4	Proficiently secure diagnostic reasoning, develop problem lists and differential diagnosis in order to deductively and critically reach the most appropriate solution (s) and management of the addressed clinical problems	**b2**	Assess the changing demands of contemporary clinical veterinary practice
			b3	Interpret the collected data and synthesis creative solution for problems associated with fish and shellfish farming conditions.
			b4	Criticize how data are collected and managed.
			b5	Analyze the results obtained from their investigation and their value and limitations.

Practical and professional skills	**3.3.**	Obtain the history of the case whether it is of an individual animal or a group of animals.	**c5**	Write a communication report, case history
	3.4.	Perform clinical examination of diseased cases and collect relevant samples	**c1**	Use more recent advanced and specialized identification techniques
			c2	Equip with specialized skills of laboratory and field samples collection and processes.
	3.5.	Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach.	**c3**	Perform emergency care to fish
			c4	Use appropriate safety procedure to protect themselves and co-workers
	3.7.	Assess and advise about animal management, nutrition under conditions of health and disease, and reproductive efficiency	**c6**	Conduct clinical examination on diseased fish and collect different samples.
	3.8.	Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options	**c7**	Identify the risks and relevant factors promoting disease outbreaks, and to implement an appropriate treatment regime.
	3.9.	Conduct evidence-based problem-solving of field–presented problems tasks.	**c8**	Implement several strategies for control of fish diseases.
General and Transferable Skills	**5.1.**	Work under pressure and / or contradictory conditions	**d1**	Work under pressure during lab sessions.
	5.2.	Function in a multidisciplinary team.	**d2**	Work in a team during the diagnosis process.
	5.3.	Communicate appropriately verbally and non-verbally.	**d3**	Cooperate with other veterinary hospitals, clinics and units in the field.
	5.4.	Organize and control tasks and resources.	**d4**	Manipulate and organize tasks during the diagnosis process.

	5.5.	Search for new information and technology as well as adopt life–long self-learning ethics	**d5**	Search for new information and technology

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar (self-learning)**	√	**Practical**	√
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others	**Field training & project**				

- Course contents:

Number of the Week	**Scientific content of the course (Course Topics)**	**Expected number of the Learning Hours**				
		Total Weekly hours	**Theoretical teaching (lectures/discussion groups/ .....)**	**Training (Practical/ Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other**
W1	Bacterial diseases of freshwater and marine water fishes.	**4**	**2**	**0**		**0**
	Case history, examination of fish population , clinical examination and postmortem examination of aquatic animals		**0**	**2**		**0**
W2	Bacterial diseases of freshwater and marine water fishes.	**4**	**2**	**0**		**0**
	Practical diagnosis of bacterial diseases.		**0**	**2**		**0**
W3	Parasitic diseases of freshwater and marine water fishes.	**4**	**2**	**0**	**Formative quiz(self-learning)**	**0**
	Practical diagnosis of parasitic diseases		**0**	**2**		**0**
W4	Parasitic diseases of freshwater and marine water fishes.	**4**	**2**	**0**		**0**
	Practical diagnosis of parasitic diseases		**0**	**2**		**0**
W5	Mycotic diseases	**4**	**2**	**0**		**0**

	freshwater and marine water fishes					0
	Practical diagnosis of fish mycotic diseases		0	2		
W6	Mycotic diseases freshwater and marine water fishes	4	2	0	Formative quiz(self-learning)	0 0
	Practical diagnosis of fish mycotic diseases		0	2		
W7	Semester works and Mid-term exam					
W8	Viral diseases of fin fish and crustaceans	4	2	0		0 0
	Viral diseases of fin fish and crustaceans and its practical diagnosis		0	2		
W9	Ornamental fish diseases (bacterial- parasitic- mycotic and viral)	4	2	0	Formative quiz(self-learning)	0 0
	Practical diagnosis of ornamental diseases.		0	2		
W10	Ornamental fish diseases (bacterial- parasitic- mycotic and viral)	4	2	0		0 0
	Practical diagnosis of ornamental diseases.		0	2		
W11	Shellfish diseases (bacterial- parasitic- mycotic and viral)	4	2	0		0 0
	Shellfish diseases (bacterial- parasitic- mycotic and viral)		0	2		
W12	Ecological diseases	4	2	0	Formative quiz(self-learning)	0 0
	Practical diagnosis of crustacean parasitic diseases.		0	2		
W13	Ecological diseases	4	2	0		0 0
	Practical diagnosis of ecological diseases.		0	2		
W14	Therapy and control of aquatic animals diseases	4	2	0		0 0
	Therapy and control of aquatic animals diseases		0	2		
W15	Practical exam					

5- Assessment timing and grading:

a- Assessment methods (summative and formative)

1. **Formative assessment**: including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activates, Mid-term exam, practical exam, oral exams and final written exams).

b- Assessment schedule and weight

Assessment method	Timing	Grade	Percent
Mid-term exam	7th week	15	15%
Formative assessment	Throughout semester	-	-
Practical exam	15th week	20	20%
Oral exam	End of semester	15	15%
Written exam	End of semester	50	50%
Total		100	100

6- Learning resources and supportive facilities:

Learning resources	**Main reference**	**Student handbook**
	Essential books (text books)	• John F. Morrissey (2018) Introduction Edward Noga (2010). Fish Disease: Diagnosis and treatment • Albert C.L.G. Gunther (2006) An Introduction To The Study Of Fishes • Austin B. and Austin D. (1993) Bacterial fish pathogens, ELLis Horwood. • Edward Noga (2010). Fish Disease: Diagnosis and treatment • Woo P.T.K. (1995) Fish diseases and disorders CAB international.
	Periodicals, Web sites, . . . etc	• www.int-res.com/journals/dao/ • Benha veterinary medical journal • www.ekb.eg
	Learning platform	Thinqi
Supportive facilities	**Devices & instruments**	As listing in device guideline
		• Well-equipped Laboratory. • Data show and Computers • Equipped lecture hall • Glass jars contained preserved fishes as spots.

		• Alive Fishes, Data show • Pictures, posters and color plates.

Matrices:

A- Content and ILOs matrix:

Topics	A) Knowledge and understanding	B) Intellectual skills	C) Practical skills	D) Transferable skills
1- Case history, examination of fish population , clinical examination and postmortem examination of fish	**a1**	**b3,b5**	**c2,c5,c6**	**d1 ,d4,d5**
2- bacterial fish diseases	**a2,3,4,5,6**	**b1,2,3,4, 5**	**c2,c5,c6**	**d1,d2,d3,d4**
3- Practical diagnosis of bacterial diseases.	**a1,a2,a4**	**b1,5**	**c1,2,3,4,5,6 ,7,8**	**d1,d2,d3,d4,d5**
4- Parasitic fish diseases	**a2,3,4,5,6**	**b1,2,3,4, 5**		**d1,d2,d3,d4**
5- Practical diagnosis of parasitic diseases	**a1,a2,a4**	**b1**	**c1,2,3,4,5,6 ,7,8**	**d1, d4,d5**
6- Mycotic fish diseases	**a2,3,4,5,6**	**b1,2,3,4, 5**		
7- Practical diagnosis of fish mycotic diseases	**a1,a2,a4**	**b1**	**c1,2,3,4,5,6 ,7,8**	**d1,d2,d3,d4,d5**
8- Viral diseases of fin fish and its practical diagnosis	**a1,a3,a4**	**b1,b3,b4**	**c1,2,3,4,5,6 ,7,8**	**d1,d2,d3,d4,d5**
9- Shellfish diseases (bacterial-parasitic-mycotic and viral)	**a1,a3,a4**	**b1,b3,b4**		
10- Practical diagnosis of shellfish diseases.	**a1,a2,a3,a5**	**b1,b3,b5**	**c1,2,3,4,5,6 ,7,8**	**d1,d2,d3,d4,d5**
11- Ornamental fish diseases (bacterial- parasitic-mycotic and viral)	**a1,a2,a3,a5**	**b1,b3,b5**	**c1,2,3,4,5**	**d1,d2,d3,d4**
12- Practical diagnosis of ornamental fishes	**a1,a3,a4**	**b1,b3,b4**	**c1,2,3,4,5**	**d1,d2,d3,d4**
13-Therapy and control of fish diseases	**a6**	**b1,b5**	**c3,c7,c8**	**d4,d5**
14-Ecological diseases	**a4,a6,a7**	**b1,b3**	**c1, c 8**	**d1,d2,d3,d4**

B- Teaching and learning methods and ILOs matrix:

Course ILOs		Teaching and Learning methods						
		L	P&M	D&S	P(TPL)	Ps	Bs	FTP
Knowledge & understanding	**a1**	√	√	√			√	
	a2	√	√	√			√	
	a3	√	√	√			√	
	a4	√	√	√			√	
	a5	√	√	√			√	

	a6	√	√	√			√	
	a7	√	√	√			√	
Intellectual skills	b1	√	√	√		√	√	√
	b2	√	√	√		√	√	√
	b3	√	√	√		√	√	√
	b4	√	√	√		√	√	√
	b5	√	√	√		√	√	√
Professional and practical skills	c1		√	√	√	√		√
	c2		√	√	√	√		√
	c3		√	√	√	√		√
	c4		√	√	√	√		√
	c5		√	√	√	√		√
	c6		√	√	√	√		√
	c7		√	√	√	√		√
	c8		√	√	√	√		√
General skills	d1	√		√		√		√
	d2	√		√	√			√
	d3			√	√			√
	d4	√		√		√		√
	d5	√		√		√		√

L: Lecture**, P&M:** Presentations & Movies**, D&S:** Discussions & Seminars (self-learning), **P(TPL):** Practical, **Ps:** Problem solving, **Bs:** Brain storming**, FTP:** field trip, Training, Project

C- Assessment methods and ILOs matrix:

Course ILOs		Assessment method				
		Formative assessment	Mid-term exam	Oral	Practical	Written
Knowledge & understanding	a1	√	√	√		√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√	√	√		√
	a6	√	√	√		√
	a7	√	√	√		√
Intellectual skills	b1	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√
	b4	√	√	√		√
	b5	√	√	√		√
Professional and practical skills	c1	√			√	
	c2	√			√	
	c3	√			√	
	c4	√			√	
	c5	√			√	
	c6	√			√	
	c7	√			√	

	c8	√			√	
General skills	**d1**	√				
	d2	√				
	d3	√		√		
	d4	√				
	d5	√				

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