Specification for Aquatic animals culturing and Management course 2019/2020

A-Affiliation

1.	**Relevant program**	Bachelor of Veterinary Medical Science (BVMSc)
2.	**Department offering the course**	Aquatic Animals Diseases and Management

Date of specification approval: ministerial decree No. 1727 on 26/4/2017
(Approved in this template by the department council on 1/10/2019**)**

B-Basic information

1.	**Course title**	Aquatic animals culturing and Management
2.	**Course code**	507 (A) I
3.	**Level**	5th year
4.	**Semester**	First semester
5.	**Total hours**	4
6.	**Lecture hours**	2
7.	**Practical hours**	2

C-Professional Information

1- Overall aims of course

By the end of this course the students should demonstrate the knowledge and understanding of the basic information about biology of most cultured fish and shellfish species, aquaculture production, various rearing systems, management principles and, breeding and nursing of farmed freshwater fish and shellfish and to equip the student with the specialized skills required to select and implement the appropriate management methods, hatchery processes and culture requirements.

2- Intended learning outcomes of the course (ILOs)

a- Knowledge and understanding

On successful completion of the course, the student should demonstrate knowledge and understanding of:

a1- Describe biology of most cultured fish and shellfish species , biology of reproduction of each species and its control..

a2- Identify the basis of aquaculture , most important water parameters principles of design and construction of inland fish farm and advantage and disadvantage of fish farming.

a3. Mention the importance of environmental aspect of site selection for aquaculture systems.

a4-Identify Fish and shellfish culture techniques (according to rearing facilities, availability of water, technology of production (intensification), number of

cultured species and integration strategies) and advanced methods of their development.

a5-Describe the breeding and nursing of most cultured fish and shellfish species (broad stock management and hatchery processes including larval rearing, hatchery operations and management).

a6- Identify Aquaculture managements of pond to be able to stocked , farm condition affect fish and shellfish and their products as program of fertilization and manuring , Feeding , daily routine work and harvesting

a7- Mention Problems associated with farm and environmental conditions.

b- Intellectual skills

On successful completion of the course, the student should be able to.

b1-Assess the impact of aquaculture actives on the quality of the environment.

b2-Select appropriate rearing facilities and the most suitable species for culturing using the available data

b3-Interpret the collected data and synthesis creative solution for problems associated with fish and shellfish farming conditions.

b4-Evaluate rearing management system, integrated farming approaches, hatchery processes and create conditions for development

b5- Analyze results of pond management assessment and identify, prioritize and generate a list of potentials needs.

b6-Creat solutions for problems associated with farm and environmental conditions

c- Professional and practical skills

After successful completion of this course, the graduates should be able to:

c1- Use the gained knowledge to identify species of fish and shellfish and their position in the market place.

c2- Manage pond and fish effectively to increase the yield production, field samples collection and processes, and use different methods to determine water quality parameters.

c3-Design rearing cage and tanks using available materials and managing them.

c4-Carry out fish and shellfish breeding procedures and techniques according to standards, Perform emergency care to fish and use appropriate safety procedure to protect themselves and co-workers.

c5- Manage, collect, record and archive fish farm data effectively, and write a technical report.

D- General and transferable skills

On successful completion of the course, the student should be able to:

d1- Collaborate effectively within team..

d2-Communicate effectively with other relevant using variety of media

d3- Demonstrate efficient IT capabilities (use digital data-base).

d4-Search for information and demonstrate lifelong learning and self-learning.

d5- Effectively manage tasks and resources as well as, work in stressful environment.

D6-Describe professional responsibility towards communities and create solutions for environmental condition associated with aquaculture.

3- Contents:

3.1. Course Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Fin Fish , crustacean and mollusks biology	-	2	2
2- Introduction to aquaculture ,soil characters and topography	2		-
3- Fish rearing facilities and pond construction	3	1	1
4-Types of fish and shellfish management methods	4	1	1
5- Determination of Water parameters and the relevant adverse conditions	2	2	2
6- Differentiation between Fish cultured spp and shellfish.	-	2	2
7- Breeding and nursing of cultured fresh water fishes.	4	1	1
8-Breeding and nursing of shellfish.	4	1	1
9- Breeding and nursing of cultured marine water fishes.	4	1	1
10- An introduction on ornamental fishes	1	1	1
11- Fertilization and Manuring of fish pond and Intergraded fish farming	4	1	1
12- Routine work in the farm	2	1	1
13- Stocking density and pond productivity	-	1	1
Total hours	**30**	15	**15**

The midterm and practical exams are included during the semester

3.2: Course contents and ILOs matrix :

Topics	a) Knowledge and understanding	b) Intellectual skills	c) Practical skills	d) Transferable skills
1- Fin Fish , crustacean and mollusks biology	a1	b1,b2	c1,c2	d1,d2,d4
2- Introduction to aquaculture ,soil characters and topography	a1,a2,a3	b1,b2	c2,c3	d5,d6
3- Fish rearing facilities and pond construction	a2	b1, b2,b4	c3	d1,d2,d4,d6
4-Types of fish and shellfish management methods	a4	b4,b5,b6	c2,c5	d5
5- Determination of Water parameters and the relevant adverse conditions	a2,a7	b4	c2,c4,c5	d1,d2,d4,d6
6- Differentiation between Fish cultured spp and shellfish.	a1	b2	c1,c2	d1,d2,d4,

7- Breeding and nursing of cultured freshwater fishes	a4,a4,a6	b2,b3,b4	c2,c4	d1,d2,d3,d 4,d5,d6
8-Breeding and nursing of shellfish.	a4,a4,a6	b2,b3,b4	c2,c4	d1,d2,d3,d 4,d5,d6
9- Breeding and nursing of cultured marine water fishes.	a4,a4,a6	b2,b3,b4	c2,c4	d1,d2,d3,d 4,d5,d6
10- An introduction on ornamental fishes	a1,a2,a4	b1,b2,b3	c1,c4	d1,d2,d3,d 4,d5,d6
11- Fertilization and manuring of fish pond and Intergraded fish farming	a4 , a6,a7	B1,b4,b5,b6	c2,c4	d1,d2 ,d4
12- Routine work in the farm	a2,a6,a7	B3,b5,b6	c2,c5	d1,d2, ,d4,d5
13- Stocking density and pond productivity	a4,a6	b3	c2,c4	d1,d2, d4,d6

4-Teaching and Learning and Assessment methods

4-1:Teaching and learning methods

- Interactive lectures includes aquaculture (facilities ,farms and fishes) identification tools , problems and management systems.
- Small group teaching (Tutorial) and problem solving within the practical class including interpretation of problems of various fish cultured species and differentiation between fish and shellfish species
- Laboratory practical sessions including training on diagnostic lab tools and breeding programs
- Assignments and researches to promote teamwork and self learning.
- Field trips and reports to understand fish farm management , problem solving and promote students responsibility
- Discussion and seminars to discuss problems associated with aquaculture activities , conditions affect fish and shellfish products and promote critical thinking and creativity.

4-2: Assessment methods

- Practical examination to assess practical and professional skills
- Semester work activities and periodical exams (quiz, assay, class actives, mid-term exam and field trip) : Corrective assessment to enhance students engagement to learning , assess students recall and performance, as well as to assess the knowledge and understanding, intellectual skills and follow up of the course.
- Written examination to assess knowledge and understanding, intellectual skills.
- Oral examination used to assess knowledge and understanding, intellectual skills and transferable skills

4 – 3-Teaching and Learning and Assessment methods and ILOs matrix

Course ILO's		Teaching and learning Methods						Assessment Method			
		Interactive Lecture	tutorials	Practical sessions	Assignments and researches	Field trips and reports	Discussions and seminars	Practical examination	Oral examination	Written examination	semester work activities and periodical sheet exams
Knowledge & Understanding	a1	√	√			√			√	√	√
	a2	√	√			√			√	√	
	a3	√	√						√	√	√
	a4	√	√						√	√	√
	a5	√	√						√	√	√
	a6	√	√						√	√	√
	a7	√	√						√	√	
Intellectual Skills	b1	√	√		√				√	√	√
	b2	√	√						√	√	
	b3	√	√				√		√	√	√
	b4	√	√			√	√		√	√	√
	B5	√	√			√			√	√	
Practical and Professional Skills	c1	√	√		√			√			√
	c2			√	√	√	√	√			
	c3			√		√		√			
	c4			√				√			
	c5			√		√		√			√
	c6			√	√	√		√			√
	C7			√		√	√	√			
	C8			√		√	√	√			
General and Tran. Skills	d1			√		√	√	√	√		√
	d2				√		√	√	√		√
	d3				√		√	√	√		√
	d4					√	√	√	√		√
	d5				√	√		√	√		
	d6							√	√		

5- Assessment timing and grading:

Assessment method	timing	grade
Mid-term exam and semester work	6th week	15
Practical exam	14th week	20

oral exam	End of semester	15
Written exam	End of semester	50
total		100

5- List of references

5.1- Course notes

- Notes on fish management.
- Practical notes on fish management

5.2- Essential books (text books)

- John F. Morrissey (2018) Introduction to the biology of marine life.
- Arvind N.Shukla (2009) Behaviour of Fishes
- Lucas and Southgate (2003), Aquaculture farming aquatic animals and plants. a black well publishing LTD, UK.
- Little D.C. and Edwards(2003) integrated livestock- fish farming systems, FAO.

5.3- Recommended books

* B.R. Silvamani (2008). Freshwater fish farming.

* Robert Stinckey (2005). Aquaculture: An introductory text.

5.4-Periodicals, Web sites.

- www.ekb.eg
- www.elsevier. Com/locate/ aquaculture

7- Facilities required for teaching and learning

- 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

Course coordinator

Prof. Dr. ADEL SHAHEEN Prof. of Fish Diseases & Management

Head of department: Dr. Aml El-Esally

Date: 1/10/2019