# Fish Management (A)

**Benha University** **Faculty of veterinary Medicine**

**Course specifications**

Programme on which the course is given: **Bachelor of Veterinary Medical Sciences**

Department offering the course: **Department of Fish Diseases and Management**

Academic year / level **5th year**

Date of specification approval: Ministerial decree No. 921 on 15/ 9/ 1987 (approved in this template by the Department Council on 30/9/2009)

**A- Basic Information**

**Title : Fish management** **Code : Vet00658a**

**Lecture: 1 hour/week**

**Practical: 2 hours /week** **Total: 3 hours/week**

**B- Professional Information**

**1- Overall aims of course**

The aim of the course is to provide basic information about aquaculture production systems, management principles and, reproduction biology of farmed freshwater fish and shellfish and to equip the student with the specialized skills required to implement appropriate management, hatchery processes and culture requirements.

**2- Intended learning outcomes of the course (ILOs)**

**a- Knowledge and understanding**

After successful completion of this course, the student must acquire the following:

a1- Understand the reproduction biology and its control in major farmed freshwater fish and shellfish

a2- Know the design, operational, management principles, systems and components essential for effective aquaculture production.

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

a4-Understand the rearing methods of cultured fish & shellfish.

a5-Know the methods and principles of fertilization and manuring of fish pond

a6- Know the broad stock management and hatchery processes including larval rearing, hatchery operation, design and management

A7- Recognize problems associated with environmental conditions.

**b- Intellectual skills**

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

b1- Estimate conditions for development of pond and tank based systems.

b2- Create outline design for a floating aquaculture system and tanks

b3- Assess hatchery processes

b4- Solve problems associated with environmental conditions

b5-Critize how data are collected and managed

b6- Analyze the results obtained from their investigation and their value and limitations

**c- Professional and practical skills**

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

c1- Show the species of fish and shellfish in common aquaculture production and their position in the market place.

c2- Equip with specialized skills of laboratory and field samples collection and processes, and practical sampling of water quality parameters

c3- perform emergency care to fish.

C4- Use appropriate safety procedure to protect themselves and co-workers.

C5- Write a communication report, Direct data presentation.

**d- General and transferable skills**

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

d1- working with others, group work in the field trip.

d2-Communicate effectively with other relevant groups

d2- utilize computers and internet skills, assay and seminars presentations

d2 – Search for new technological methods to solve emergency farm problem .

d3- Organize and Manage tasks and resources as well as, adopt to work under pressure.

**3- Contents :**

| Topic | No. of hours | Lecture | Practical |
|---|---|---|---|
| 1- Fish biology | 10 | - | 10 |
| 2- Introduction to aquaculture ,soil characters and topography | 2 | 2 | - |
| 3- Fish rearing facilities and pond construction | 3 | 3 | - |
| 4-Determintion of Water parameters | 8 | 2 | 6 |
| 5- Differentiation between Fish cultured spp. | 8 | - | 8 |
| 6- Breeding and nursing of cultured fish and shellfish. | 4 | 4 | - |
| 7- Intergraded fish farming | 1 | 1 | - |
| 8- Routine work in the farm | 4 | 1 | 3 |
| 9- Fertilization and Manuring of fish pond. | 2 | 2 | |
| 10- Stocking density and pond productivity | 3 | - | 3 |
| **Totals** | **45** | **15** | **30** |

## 3.1. ILOs matrix :

| Topics | A) Knowledge and understanding | B) Intellectual skills | C) Practical skills | D) Transferable skills |
|---|---|---|---|---|
| 1- Fish biology | a1 | - | c1,c2 | d1,d2,d3,d4,d5 |
| 2- Introduction to aquaculture, soil character and topography | a3,a2 | b1 | - | d1,d2,d3,d4,d5 |

| | | | | |
|---|---|---|---|---|
| 3- Fish rearing facilities and pond construction | a2 | b1 | - | d1,d2,d3,d4,d5 |
| 4- Determination of water parameters | a3,a7 | b4 | c2 | d1,d2,d3,d4,d5 |
| 5- Differentiation between fish species | a1 | - | C1 | d1,d2,d3,d4,d5 |
| 6- Breeding and nursing of cultured fish and shellfish | a4 | - | - | d1,d2,d3,d4,d5 |
| 7- Integrated fish farming | a4 | - | - | d1,d2,d3,d4,d5 |
| 8- Routine work in the farm | a2 | - | c4,c5 | d1,d2,d3,d4,d5 |
| 9- Fertilization and manuring | a5 | - | - | d1,d2,d3,d4,d5 |
| 10- Stocking density and pond productivity | a2,a6 | - | - | d1,d2,d3,d4,d5 |

## Assessment matrix:

| | **A) Knowledge and understanding** | **B) Intellectual skills** | **C) Practical skills** | **D) Transferable skills** |
|---|---|---|---|---|
| 1-Term work and field trip | √ | √ | √ | √ |
| 2-Mid term examination | √ | √ | √ | - |
| 3-Final term examination | √ | √ | - | - |
| 4-Oral examination | √ | √ | - | - |
| 5-Practical work | √ | √ | √ | - |

**4- Teaching and learning methods**

4.1- lectures

4.2- Practical sessions

4.3-Small groups teaching

4.4-Field trips

4.5- Assays and seminars

**5- Student assessment methods**

5.1- Mid term examination to assess the understanding and follow up of the course.

5.2- Practical examination to assess practical skills ..

5.3- Oral examination to assess professional and intellectual skills .

5.4- Written examination to assess knowledge and understanding, practical and professional skills .

5.5 Term activity work by sharing in the field trip to fish farms

**Assessment schedule**

| | |
|---|---|
| Assessment 1 mid term examination | Week 7 |
| Assessment 2 practical examination | Week 13 |
| Assessment 3 written examination | Week 15 |
| Assessment 4 oral examination | Week 15 |
| Assessment 5 Term activity | Week 10 |

**Weighting of assessment**

| | |
|---|---|
| Term activity (Field Trip) | 5% |
| Mid term examination | 5% |
| Oral examination | 20% |
| Final term examination | 50% |
| Practical work | 20% |
| Other types of assessments | 0 |
| Total | 100% |

**6- List of references**

**6.1- Course notes**

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

**6.2- Essential books (text books)**

* Hepher, B. and Pruginin (1981) Commercial fish farming. Printed in the united state of America.

* Brown.L (1993) Aquaculture for veterinarians, Pergamon Press LTd.

* Stoskopf .K. Michael,.D.V.M(1993) Fish medicine. W.B. saunders company, Mexico.

**6.3- Recommended books**

- Pillay T.V.R. (1995) Aquaculture principles and practices, Black well science, Inc,USA.
- Lucas and Southgate (2003), Aquaculture farming aquatic animals and plants. a black well publishing LTD, UK.

* Little D.C. and Edwards(2003) integrated live stock- fish farming systems , FAO.

**7- Facilities required for teaching and learning**

- Laboratory.
- Glass jars as spots.
- Fishes
- Data show
- Pictures, posters and color plates.

**8-Web site:**

www.elsevier. Com/locate/ aquaculture

**Course coordinator**

**1- Professor Adel Shaheen** Prof. of Fish Diseases & Management

**2- Professor Amany Abbass** Prof. of Fish Diseases & Management

**Head of department:**

Prof.Dr .Adel Abd El-Aleem Shaheen

**Date:**