A. BASIC INFORMATION

Title: Fish Diseases
Code: AFIS, BFIS

Hours:
- Lectures: 2 hrs/week
- Practical: 2 hrs/week
- Total: 4 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:
Knowledge: about normal and diseases of freshwater, marine fish, and crustacean
Skills: assisted control programs (controlled fish cultures programs. Diagnosis and prevention of fish and crustacean disease.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding:
   - a\₁ Normal and diseases of freshwater and marine fish as well as crustacean.
   - a\₂ Programs for controlled fish diseases to increase production in cultured fish.
   - a\₃ Knowledge and understanding of the normal macroscopic and microscopic structure of fish and crustacean tissues and organs.
   - a\₄ Knowledge and understanding of fish health maintenance and disease prevention
   - a\₅ Knowledge and understanding of the scientific principles underlying laboratory diagnosis.
   - a\₆ Knowledge and understanding epidemiology of fish and crustacean diseases.

b. Intellectual Skills:
   - b\₁ Analysis of clinical signs of diseases with requested laboratory diagnosis.
   - b\₂ Creative thinking to control disease problems in freshwater and marine fish and crustacean.
   - b\₃ Problem identification and solving measures for such diseases.
   - b\₄ Apply appropriate quantitative and qualitative methodologies for prevention and control of fish and crustacean diseases.
c. Professional and Practical Skills: The graduate will be able to

- Handle and restrain fish in a welfare manner.
- Obtain an accurate and relevant history of the individual fish or fish groups and their environment.
- Perform a thorough clinical examination.
- Collect, preserve and transport fish samples by applying standard practical laboratory techniques; interpret laboratory results by diagnostic aids, integrate those with clinical information.
- Assess the nutritional status of a fish and be able to advise on appropriate husbandry and feeding measures.
- Identify etiological agents and information relevant to a clinical problem with differential diagnosis.
- Demonstrate a practical ability to apply lesion knowledge of disease processes within the clinical signs, PM and environmental status.
- Advise on fish management and understand the importance of fish health economics in the context of acceptable fish welfare.
- Recognize treatment for diseased fish with life threatening conditions.
- Obtain and record data for prepare current and/or retrospective assessment and analysis of fish health and production record.
- Understand how to minimize the risks of contamination, cross infection and predisposing factors leading to fish disease in the field.
- Apply imaging techniques, and advise on their safe Use Interpret the results of imaging techniques in the pursuit of a diagnosis.
- Recognize the indications for treatment.
- Demonstrate an understanding of veterinary public health issues and the procedures to follow with notifiable and zoonotic diseases.
- Utilize appropriate safety procedures to protect clients and co-workers and self.
- Have a commitment to ongoing learning and self evaluation.
- the graduate recognize the most important and economic fish and crustacean diseases under Egyptian environment condition.

d. General and Transferable Skills: The graduate must be able to

- Conduct themselves in a professional manner with regard to the veterinarian's professional and legal responsibilities and understand and apply the ethical codes as set out in general organization of veterinary services (GOVS).
- Work effectively as a member of a team in the delivery of services to community.
- Communicate effectively with the public, colleagues and appropriate authorities.
- Perform research on common disease problems in the surrounding domestic and wild fish in the community.
- Utilize communicating skills, have access to the internet and retrieve information.
- Demonstrate knowledge of the organization and management of veterinary practice; principles of certification, basic financial and accounting practices and record keeping.
- Perform research and solve any emerging disease problem.

e. Contents:

<table>
<thead>
<tr>
<th>Topic</th>
<th>1st Semester</th>
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<tbody>
<tr>
<td></td>
<td>No. of hours</td>
</tr>
<tr>
<td>Natural of fish diseases</td>
<td>2</td>
</tr>
<tr>
<td>Bacterial disease of fish</td>
<td>20</td>
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</table>
### Teaching and Learning Methods:

1. **Lectures and practicals** of every topic in the course.
2. Collection of some information from textbooks.
3. Field visits (farms) Department laboratory.
4. Study of clinical cases in the department laboratory.

### Student Assessment Methods:

#### Exam

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Type</th>
<th>To assess</th>
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<tbody>
<tr>
<td>1</td>
<td>Written Mid-term</td>
<td>the ability to understand and remember knowledge,</td>
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<tr>
<td></td>
<td></td>
<td>and intellectual skills</td>
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<tr>
<td>2</td>
<td>Written Final-term</td>
<td>the ability to understand and remember knowledge,</td>
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<td></td>
<td></td>
<td>and intellectual skills</td>
</tr>
<tr>
<td>3</td>
<td>Practical Final-term</td>
<td>professional and practical skills</td>
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<tr>
<td>4</td>
<td>Oral Final-term</td>
<td>skills of discussion</td>
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#### Assessment Schedule (in each semester):

<table>
<thead>
<tr>
<th>Exam</th>
<th>Week (Week)</th>
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<tbody>
<tr>
<td>Assessment 1</td>
<td>Written Mid-term</td>
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<tr>
<td>Assessment 2</td>
<td>Written Final-term</td>
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<tr>
<td>Assessment 3</td>
<td>Practical Final-term</td>
</tr>
<tr>
<td>Assessment 4</td>
<td>Oral Final-term</td>
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</tbody>
</table>

#### Weighing of assessments

<table>
<thead>
<tr>
<th>Exam</th>
<th>Per Semester (%)</th>
<th>Total (%)</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Assessment 2</td>
<td>Written Final-term</td>
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<tr>
<td>Assessment 3</td>
<td>Practical Final-term</td>
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<tr>
<td>Assessment 4</td>
<td>Oral Final-term</td>
<td>5</td>
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</tbody>
</table>

Total: 50 100

### List of References:

1. **Course Notes**:  
   Departmental Notes By Prof. Dr. Magdy Khalil Soliman

2. **Essential Books**:  
   - Post (Fish Health), Bacterial fish disease
   - Noga (Fish Medicine), parasitic diseases of marine fish

3. **Recommended Books**:  
   - Post book in Fish Health

4. **Periodicals, websites, etc**:  
   Nothing
V. Facilities Required for Teaching and Learning

- Microscopes, computers (Personal and Notebook).
- Datashow and video films
- Audio and video aids, mobile screens for exhibition.

Course Coordinator: Prof. Dr. Magdy Khalil Soliman

Head of Department: Prof. Dr. Hany Ellakany

Date: