MINISTRY OF EDUCATION AND TRAINING SOCIALIST REPUBLIC OF VIETNAM

CAN THO UNIVERSITY

Independence - Freedom - Happiness

SUBJECT OUTLINE DETAILS

1. Subject: Introduction to Fish Health and Clinical Fish Disease Diagnosis (Đại cương về bệnh thủy sản và phương pháp chẩn đoán)

- Code: AQ305
- Credits: 3
- Hours: 45 theory hours

2. Management Unit:

- Department: Aquatic Pathology
- Faculty/School/Institute/Center/Department: College of Aquaculture and Fisheries

3. Prerequisites: Microbiology and Water Science

4. Subject objectives: Upon completing this course, students will be able to:

4.1. Knowledge:

- 4.1.1. Understand the concept of fish health and interactions between the host, the environment, and pathogens and disease development
- 4.1.2. Obtain general knowledge on infectious and non-infectious diseases that affect fish.
- 4.1.3. Understand the principles of disease diagnosis, management, treatments, water quality and disease in cultured fish.

4.2. Skill:

- 4.2.1. Recognize disease problems through the interactions between the host, the environment, and pathogens and disease development
- 4.2.2. Collect proper fish samples for submission to a diagnostic laboratory
- 4.2.3. Implement methods of prevention and treatments for specific diseases.
- 4.2.4. Control diseases from non-infectious sources.
- 4.2.5. Recognize specific clinical signs associated with common infectious disease sources.

4.3. Attitude:

- 4.3.1. Have enthusiasm in the work
- 4.3.2. Have good behaviour in science
- 4.3.3. Have progressive spirit, improve learning and professional experience

5. Brief description of subject content:

The subject introduce introduce students to common infectious and non-infectious diseases that affect fish. The lectures will consist of descriptions of diseases, treatment

regimes, clinical signs of disease, and management practices. It will also introduce students to general definitions used in the other fish health and related courses.

6. Subject content structure:

j j	Content	Hours	Objectives
Chapter 1.	Introduction to fish health	15	
1.1.	Introduction to fish diseases and health	3	4.1.1, 4.2.1, 4.3.1, 4.3.2, 4.3.3
1.2.	Fish Anatomy, physiology and concepts of fish health	6	4.1.1, 4.2.1, 4.3.1, 4.3.2, 4.3.3
1.3.	Pathological changes related to disease and health management	6	4.1.1, 4.2.1, 4.3.1, 4.3.2, 4.3.3
Chapter 2.	Infectious and non-infectious diseases in fish	15	
2.1.	Viral diseases	3	4.1.2, 4.2.1, 4.3.1, 4.3.2, 4.3.3
2.2.	Bacterial diseases	3	4.1.2, 4.2.1, 4.3.1, 4.3.2, 4.3.3
2.3.	Fungal diseases	3	4.1.2, 4.2.1, 4.3.1, 4.3.2, 4.3.3
2.2.	Parasitic diseases	3	4.1.2, 4.2.1, 4.3.1, 4.3.2, 4.3.3
2.2.	Non-infectious diseases	3	4.1.2, 4.2.4, 4.3.1, 4.3.2, 4.3.3
Chapter 3.	Principles of disease diagnosis, prevetion and treatment of fish diseases	15	
3.1.	Principles of disease diagnosis	5	4.1.3, 4.2.2, 4.2.5, 4.3.1, 4.3.2, 4.3.3
3.2.	Prevention of fish diseases	5	4.1.3, 4.2.1, 4.3.1, 4.3.2, 4.3.3
3.3.	Treatment of fish diseases	5	4.1.3, 4.2.1, 4.3.1, 4.3.2, 4.3.3

7. Teaching method:

- Theory
- Case study and report students
- Questions and discussions. Topic reports

8. Duties of student:

Students have to do the following duties:

- Lecture/Class attendance: 80% of lectures
- Attend oral presentations and all exams..

9. Assessment of student learning outcomes:

9.1. Assessment

No.	Point components	Rules and Requirement	Weights	Objectives
1	Attendance, participation, diligence and professionalism .	 Participate in all class of theory, exams, and laboratory exercises The instructor should be notified in advance of known absence. 	10%	
2	Scores of short exams and oral presentations.	 Mid-term exams Oral presentation: Written (50%) and oral (50%) presentations will be made. 	20% 20%	
3	Scores of final exam	- Final exam	50%	

9.2. Grading

- Grading components and final test scores will be marked on a scale of 10 (0 to 10), rounded to one decimal place.
- Subject score is the sum of all the components of the evaluation multiplied by the corresponding weight. The subject score is marked on a scale of 10 and rounded to one decimal place, then is converted to A-B-C-D score and score on a scale of 4 under the academic provisions of the University.

10. Materials:

Materials information

[1] Health Maintenance and Principal Microbial Diseases of Cultured Fishes. J. A. Plumb.

[2] Fish Disease: Diagnosis and Treatment. Edward J. Noga. 2010. Wiley-Backwell

Publishing. Second edition, 519 pages

[3] Asia Diagnostic Guide to Aquatic Animal Diseases. Melba G. Bondad-Reantaso (2001).. FAO fisheries technical paper 402/2.

www.fao.org/docrep/005/Y1679E/Y1679E00.HTM.

[4] Manual of diagnostic Tests for Aquatic Animals, 2003. http://www.oie.int

[5] Fish Diseases and Disorders. Woo, P. T. K. 2011. Vol. 1, 2, 3. CAB International, Wallingford, U. K.

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Week	Content	Theory (hours)	Practice (hours)	Students' duties
1	Chapter 1	2	0	Reading lecture notes and
	1.1. Introduction to fish diseases and health			Textbooks [1]
2	Chapter 1:	2	0	Reading lecture notes and Textbooks [1]
	1.2. Fish Anatomy, physiology			
3	Chapter 1:	3	0	Reading lecture notes and Textbooks [1]
	1.2. Concepts of fish health			
4	Chapter 1:	3	0	Reading lecture notes and Textbooks [1]
	1.3. Pathological changes related to disease			
5	Chapter 1:	5	0	Reading lecture notes and Textbooks [1]
	1.3. Fish health management			Textbooks [1]
6	Chapter 2:	3	0	Reading lecture notes and Textbooks [5]
7	2.1 Viral diseases Chapter 2: 2.2 Bacterial diseases	3	0	Reading lecture notes and Textbooks [5]
8	Chapter 2: 2.3 Fungal diseases	3	0	Reading lecture notes and Textbooks [5]
9	Chapter 2: 2.4 Parasitic diseases	3	0	Reading lecture notes and Textbooks [5]
10	Chapter 2: 2.5. Non-infectious diseases	5	0	Reading lecture notes and Textbooks [5]
11	Chapter 3:	3	0	Reading lecture notes and
	3.1 Principles of disease diagnosis			Textbooks [2] [3] [4]
12	Chapter 3:	3	0	Reading lecture notes and Textbooks [2] [3]

11. Self-study Guide:

	3.1 Principles of disease diagnosis			
13	Chapter 3: 3.2 Prevention of diseases	5	0	Reading lecture notes and Textbooks [1] [2]
14	Chapter 3: 3.3 Treatment of fish diseases	5	0	Reading lecture notes and Textbooks [1] [2]
15	Topic presentations and discussions	3	0	Course review

ON BEHALF OF RECTOR DEAN/ DIRECTOR

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HEAD OF DEPARTMENT