VM4202: AQUATIC VETERINARY MEDICINE

Effective Term
Semester B 2022/23

Part I Course Overview

Course Title
Aquatic Veterinary Medicine

Subject Code
VM - Jockey Club College of Veterinary Medicine and Life Sciences
Course Number
4202

Academic Unit
Infectious Diseases and Public Health (PH)

College/School
Jockey Club College of Veterinary Medicine and Life Sciences (VM)

Course Duration
One Semester

Credit Units
2

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Completion of Year 4 courses with C grade or above

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course will build on the previous fish health BVM course (VM2106). It will focus on diagnostic and treatments used for fish and crustacean diseases, which will prepare student for the clinical year rotation in aquatic animal medicine. The

main viral, bacterial, parasitic, fungal, and environmental diseases of crustaceans and fish species will be presented using a case-based problem teaching approach. Students will learn how to treat and prevent these diseases. We will also cover surgical procedures done on ornamental fish species. Other topics covered will include legislation, regulations, and policies on aquatic animal veterinary practice, as well as current issues on aquatic animal welfare.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Ability to take a history and decide on appropriate diagnostic tests for fish and crustacean medical cases		x	x	
2	Make a diagnosis based on diagnostic test results from fish and crustacean cases		x	x	
3	Make appropriate treatment recommendations for common diseases of fish and crustaceans including drug doses for difference conditions		x	x	
4	Identify prevention strategies for common diseases of fish and crustaceans		x		
5	Perform minor surgical procedures on ornamental fish including anesthesia of fish.		x	x	x
6	Demonstrate good understanding of the laws, regulations and policies that directly impact the practice of aquatic veterinary medicine		x		

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Lectures will provide and aquatic animal medicine principles and cases to students	1, 2, 3, 4, 6	3 hrs / wk for 6 weeks

2	Laboratory-based practical sessions	The laboratory practical sessions provide students with opportunities to perform surgery on ornamental fish; observed surgery at Ocean park; run laboratory diagnostic tests including IQplus PCR	5	9 hours in total (3 three hour labs)

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Midterm exam	4, 5, 6	45	Written and oral test
2	Laboratory exercise and case presentations	3	10	

Continuous Assessment (%)

55

Examination (%)

45

Examination Duration (Hours)

2

Assessment Rubrics (AR)

Assessment Task

1. Midterm Exam

Criterion

Students should have obtained and be able to communicate in written format an understanding of the material covered in the classroom on aquatic animal medicine

Excellent (A+, A, A-)

Students achieve an 86% or greater on the examination of the class.

Good (B+, B, B-)

Students achieve a 65% or greater on the examination of the class.

Fair (C+, C, C-)

Students achieve a 50% or greater on the examination of the class. (C letter grade is at least 50% or greater)

Failure (F)

Students achieve less than 50% on the examination of the class and laboratory material.

Assessment Task

2. Laboratoryexercise

Criterion

Students should attend the laboratory session, be attentive, and ask questions. At the end of the laboratory they should be able to perform surgery on an ornamental fish including maintaining the animal under adequate anesthesia.

Excellent (A+, A, A-)

Students have no issues performing surgery on fish. They have no problems with the anesthesia of the animals during the surgical procedure. Students can answer all questions asked of them regarding the procedure and pre and post operative care of the fish.

Good (B+, B, B-)

Students have a few questions regarding the surgical procedure on fish. They have no problems with the anesthesia of the animals during the surgical procedure. Students can answer 80% of the questions asked of them regarding the procedure and pre and post operative care of the fish.

Fair (C+, C, C-)

Students have a few questions regarding the surgical procedure on fish. They have a few questions about the anesthesia of the animals during the surgical procedure. Students can answer more than 50% of the questions asked of them regarding the procedure and pre and post operative care of the fish.

Failure (F)

Students fail to perform surgery on fish. They can not anesthetize the animals during the surgical procedure. Students cannot answer more than 50% of the questions asked of them regarding the procedure and pre and post operative care of the fish.

Assessment Task

3. Case presentation

Criterion

Students should be able to critically work through a fish disease case, evaluate literature on the topic, and present the case to their peers.

Excellent (A+, A, A-)

The student solves the fish health case without any assistance from the instructor (i.e. provide a differential list, list of diagnostic tests, recommendations to the fish owner and a prevention strategy based on a literature review). They complete a clearly written grammatically correct report on the case without any errors. They present the case to the class with an effective clear, and professional oral presentation. Demonstrate excellent synthesis of how to assess a fish health case in detail.

Good (B+, B, B-)

The student solves the fish health case with limited assistance from the instructor (i.e. provide a differential list, list of diagnostic tests, recommendations to the fish owner and a prevention strategy based on a literature review). They complete a clearly written report on the case with only minor grammatical and content errors. They present the case to the class with an effective clear, and professional oral presentation with only a few minor mistakes. Demonstrate good synthesis of how to assess a fish health case in detail.

Fair (C+, C, C-)

The student solves the fish health case with assistance from the instructor (i.e. provide a differential list, list of diagnostic tests, recommendations to the fish owner and a prevention strategy based on a literature review). They complete a written report on the case but there are several grammatical and content errors. They present the case to the class but the presentation has errors and is not professional (choice of words, dress and mannerisms are not professional). Demonstrate some ability to assess a fish health case but needs prompting from the instructor.

Failure (F)

Students fail to complete the assignment. They cannot accurately describe and work through relevant information related on various aspects of fish health issues. They cannot provide appropriate analysis and satisfactory justifications to the diagnosis of pathological manifestations, and may show evidence of plagiarism or inability to communicate ideas. And/or they submit a plagiarized assignment

Assessment Task
4. Examination

Criterion
Students should have obtained and be able to communicate in written format an understanding of the material covered in the classroom and the laboratory session on aquatic animal medicine

Excellent (A+, A, A-)
Students achieve an 86% or greater on the examination of the class.

Good (B+, B, B-)
Students achieve a 65% or greater on the examination of the class.

Fair (C+, C, C-)
Students achieve a 50% or greater on the examination of the class. (C letter grade is at least 50% or greater)

Failure (F)
Students achieve less than 50% on the examination of the class and laboratory material.

Additional Information for AR
Mark Range
The following is the mark range for each letter grade that must be used for assessment of courses offered by the PH and VCS Department of JCC (including Gateway Education (GE) courses).

Letter Grade	Mark Range	Letter Grade	Mark Range
A+	≥85%	C+	55-59.99%
A	80-84.99%	C	50-54.99%
A-	75-79.99%	F	<50%
B+	70-74.99%		
B	65-69.99%		
B-	60-64.99%		

Part III Other Information

Keyword Syllabus
Aquatic animal medicine; treatment and prevention of fish and crustacean diseases

Reading List

Compulsory Readings

	Title
1	Selected reading material fish diseases assigned throughout the course

Additional Readings

	Title
1	Holmes K. and Pitham T. 2011. Manual of Koi Health 2nd. Firefly Books Inc. Buffalo, NY.
2	Stoskopf, MK. Fish Medicine. 1993. WB Saunders Company, Philadelphia, Pennsylvania.

3	Leatherland, J. F., Woo, P. T. K., & Bruno, D. W. 1995. Fish diseases and disorders (V1-3).Wallingford, Oxon, UK: CABI Pub.
4	Noga, E, J., 2014. Fish Disease Diagnosis and Treatment 2nd ed. Wiley Blackwell, Daryaganj, New Delhi.