

Cover Sheet: Request 12290

VEM 5374 Diseases of Warm Water Fish

Info

Process	Course Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Ruth Francis-Floyd rffloyd@ufl.edu
Created	2/12/2018 10:21:14 AM
Updated	4/10/2019 10:27:41 AM
Description of request	We are requesting to change course delivery from face-to-face delivery to on-line delivery. We are also requesting to change from S/U grading to regular letter grading. Finally, we are requesting a change from 2 credits to 3 credits.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	VM - DVM Curriculum Committee	Melissa Pett		3/19/2019
No document changes					
College	Approved	VM - College of Veterinary Medicine	Thomas Vickroy		3/19/2019
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			3/19/2019
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 12290

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Submitter: Ruth Francis-Floyd rffloyd@ufl.edu

Created: 2/12/2018 10:10:18 AM

Form version: 1

Responses

Current Prefix VEM

Course Level 5

Number 374

Lab Code None

Course Title Diseases of Warm Water Fish

Effective Term Summer

Effective Year 2018

Requested Action Other (selecting this option opens additional form fields below)

Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? No

Change Transcript Title? No

Change Credit Hours? Yes

Current Credit Hours 2

Proposed Credit Hours 3

Change Variable Credit? No

Change S/U Only? Yes

S/U Only Status Change from S/U Only

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 0

Change Course Description? Yes

Current Course Description Current course was face-to-face format.

Proposed Course Description (50 words max) New course is on-line format. We can accommodate more students and more content.

Change Prerequisites? No

Change Co-requisites? No

Rationale This course is required for a certificate program within the College of Veterinary Medicine. The face-to-face format limited the number of students that could take the course. The new format does not restrict student participation and allowed for an update in content, reflected in the increased number of credit hours.

College of Veterinary Medicine
Department of Large Animal Clinical Science
Aquatic Animal Health Program

2015 SW 16th Ave.
PO Box 100136
Gainesville, FL 32610-0136
352-294-4197 Phone
352-392-8289 Fax

April 10 2019

To: UCC Subcommittee
Re: VEM 5374 – Diseases of Warm Water Fish

Thank-you for taking the time to review the request to change VEM 5374 to a graded course (as opposed to s/u) and to change it from 2 credits to 3 credits for the veterinary students. I have uploaded the syllabus and 2019 schedule of lecture material and course content for the committee's information. Below I will try to address the specific concerns that have been raised.

1. There seems to be some confusion about the laboratory course (VEM 5374L) and the didactic course (VEM 5374). **This request is for the didactic course, not the lab.** I withdrew the request for approval of the lab as the way the course was structured very few veterinary students were able to participate. It seemed better to make this experience available to them in the form of wetlabs which could be scheduled specifically for students interested in learning some of these techniques.
2. Historically this course was offered as a two-week summer short course which was a combination of lecture and lab material taught at UF facilities outside of Gainesville (The Whitney Laboratory and the UF Tropical Aquaculture Laboratory). In 2014 we discontinued the short course format because we could not accommodate all of the students that wanted to take it, it was very difficult and expensive for students to be away from their home base for two consecutive weeks, and we wanted to increase/ update course content. In 2014 we offered the didactic course on-line for the first time. This was approved as a 3 credit hour course for graduate students, but the separate approval for veterinary students was not completed so it remained a 2 credit hour course for them.
3. I think you will find that material currently offered to students probably exceeds what is optimal for a 3 credit hour course and a content upgrade is expected within the coming year to correct this. This course is taught Summer C as 6 modules, two weeks each, with a one week break between the third and fourth module. Lectures vary from 10 min to an hour, but contact time (for lecture material) is probably about 8 hours per module with supplemental material available. I hope to develop a new course that will absorb some of the "entry level" material that will be available for undergraduate (marine science majors) and graduate students ... and adjust the content of this course accordingly.

Please let me know if you have additional questions. My apologies for the confusion.

Sincerely,



Ruth Francis-Floyd, DVM, MS, DACZM
Professor and Extension Veterinarian
Aquatic Animal Health

Diseases of Warm Water Fish (FAS 5255C)
Lecture Content, 2019

Module 1: Anatomy, Physiology and Taxonomy

1. Introduction to Fish Diseases and Fish Health Management – Ruth Francis-Floyd
2. Introduction to Fish Families - Jeff Hill
 - a. Introduction to Fish Biology and Fish Groups
 - b. Freshwater Ornamental Species
 - c. Brackish and Marine Ornamentals
 - d. Other Aquaculture Species
3. Special Species:
 - a. Koi – Ruth Francis-Floyd
 - b. Syngnathids – Kathy Heym
 - c. Sting Rays - Kathy Heym
 - d. Sharks – Claire Erlacher-Reid
4. Anatomy of Fish – Denise Petty
5. General Principles of Fish Physiology - Denise Petty
6. Introduction to Diagnostic Hematology of Fish – Nicole Stacy
7. Handling Freshwater Game Fish – Debbie Crain
8. Basic Principles of Infectious Diseases - James Wellehan
9. Introduction to Parasitic Diseases of Fish – Ed Noga
10. Introduction to Bacterial Diseases of Fish – Roy Yanong

Module 2: Treatment Options and Management Plans

1. Introduction to Treating Fish Diseases - Ruth Francis-Floyd
2. Essential Calculations for Fish Disease Treatments – Ruth Francis-Floyd
3. Treating Fish Diseases, Part I: External Parasites – Ruth Francis-Floyd
4. Use of Copper as a Therapeutant for Fish – Ruth Francis-Floyd
5. Treating Fish Diseases, Part II: Internal Parasites – Ruth Francis-Floyd
6. Treating Fish Diseases, Part III: Fungal Infections – Ruth Francis-Floyd
7. Treating Bacterial Diseases – Ruth Francis-Floyd
8. Fish Anesthesia – Ruth Francis-Floyd
9. Emergency Medicine and Critical Care – Tonya Clauss
10. Case Studies:
 - a. What's Your Diagnosis? – Claire Erlacher-Reid
 - b. Coelomic Distension and Anemia in a Manta Ray – Tonya Clauss
 - d. Fish Handling, Restraint and Transport – Tonya Clauss

Module 3: Water Quality and Aquatic Systems

1. Water Quality Parameters, Testing and Water Sources – Denise Petty

2. Water Quality: Oxygen and Dissolved Gases – Denise Petty
3. Water Quality: Nitrogen – Denise Petty
4. Water Quality: pH and the Carbon Cycle – Denise Petty
5. Aquatic Systems: Re-circulating – Craig Watson
6. Public Aquaria and Marine Systems – Jim Kinsler
7. Management from a Distance – Debbi Crain
8. Case Studies:
 - a. Head and Lateral Line Disease – Andy Stamper
 - b. Supersaturation (“Gas Bubble Disease”) – Kathy Heym
 - c. Nitrate – The Other Nitrogen By-Product – Ruth Francis-Floyd

Module 4 Parasitic : Nutrition, Husbandry and Biosecurity

1. Advanced Water Management (“Green Water”) – Andy Stamper
 3. Introduction to Diagnostic Procedures for Fish – Claire Erlacher-Reid
2. An Introduction to Fish Nutrition – Ruth Francis-Floyd
3. Fish Feed and Feeding Practices – Ruth Francis-Floyd
4. An Introduction to Nutritional Diseases of Fish – Ruth Francis-Floyd
5. Quarantine and Biosecurity – Ruth Francis-Floyd
6. Zoonotic Diseases - Stephen Cassle
7. Introduction to Reportable Diseases – Kathleen Hartman
8. Introduction to Fungal Diseases – Roy Yanong
9. Case Studies:
 - a. Goiter – Ruth Francis-Floyd
 - b. Aflatoxicosis – Denise Petty
 - c. Phaeohyphomycosis in Hatchery-Reared Sturgeon – Natalie Steckler

Module 5: Parasitic Diseases

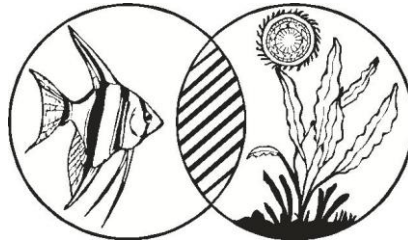
1. Metazoan Ectoparasites, Part I - Ed Noga
2. Metazoan Ectoparasites, Part II – Ed Noga
3. Protozoan Ectoparasites, Part I: Encysting Parasites – Ed Noga
4. Protozoan Ectoparasites, Part II: Non-Encysting Parasites – Ed Noga
5. Metazoan Endoparasites – Ed Noga
6. Protozoan Endoparasites – Ed Noga
7. An Overview of Treatment Options for Parasitic Diseases – Ed Noga
8. Case Studies:
 - a. What the “Ich”? – Elizabeth Arnett-Chin
 - b. Amyloodinosis in Fish – Mark Flint
 - c. *Ichthyophonus hoferi* in Chinook Salmon – Theresa Floyd-Rump
 - d. Management of *Eimeria* in Cownose Rays – Stephen Cassle

Module 6: Bacterial and Viral Diseases

1. Bacterial Dis: Aeromonads, Pseudomonads, Vibrios, Edwardsiella, Streptococcus – Roy Yanong

2. Bact Dis: Primarily External Gram Negative...Columnaris and Similar Diseases – Roy Yanong
3. Bact Dis: Slow-Growing, Acid-Fast (Mycobacteria and Kin) or Gram Positive (BKD) – R Yanong
4. Bact Dis: “Piscirickettsia-like” and Chlamydia-like Organisms – Roy Yanong
5. Introduction to Viral Diseases of Fish – Roy Yanong
6. Viral Diseases: CCV, Carp Pox, KHV and SVC – Roy Yanong
7. Viral Diseases: Betanodavirus, Iridovirus – Roy Yanong
8. Viral Diseases: VHS IVb and Carp Edema Virus – Roy Yanong
9. Case Studies:
 - a. Overview of Piscine Mycobacteriosis – Kathy Heym
 - b. Gourami Megalocytivirus – Roy Yanong

Diseases of Warm Water Fish



Graduate Students: FAS 5225C (3 credits)

Veterinary Students: VEM 5374 (3 credits)

Diseases of Warm Water Fish is designed to provide instruction in the methodology of diagnosis, treatment and management of parasitic, bacterial, viral, nutritional, and environmental diseases of warm water food fish and aquarium species. This course is open to graduate and veterinary students, veterinarians, fisheries biologists, aquaculturists, and professional aquarists. The course is designed to provide basic instruction in fish biology and general husbandry, aquatic systems and water quality management, identification and interpretation of infectious agents impacting fish health, development of responsible and effective treatment plans, and consideration of biosecurity, quarantine and regulatory issues relevant to fish health.

Course Coordinators:

Dr. Ruth Francis-Floyd

Department of Large Animal Clinical Sciences and
SFRC Program of Fisheries and Aquatic Sciences
University of Florida
7922 NW 71 Street
Gainesville, FL 32653
Phone: (386) 643-8904 (cell)
Email: rffloyd@ufl.edu

Dr. Denise Petty

North Florida Aquatic Vet Services
Ft White, FL
Phone: (386) 344-8363 (cell)
Email: pettyd@windstream.net

Dr. Roy Yanong

UF Tropical Aquaculture Laboratory
SFRC, Fisheries and Aquatic Sciences
University of Florida
1408 24th Street SE
Ruskin, FL 33570
Phone: (813) 671-5230 (office)
Email: rpy@ufl.edu

Dr. Francis-Floyd will be available via e-learning web mail, M-F 8 am to 5 pm. She will also be available during discussion sections, and by appointment. She will make every effort to respond to your emails within 24-48 hours.

Course Faculty:

Dr. Elizabeth Arnett-Chinn – Naples Zoo at Caribbean Gardens
Dr. Stephen Cassle - U.S. Army Veterinary Corps
Dr. Tonya Clauss – Georgia Aquarium
Ms. Debbi Crain – Consultant
Dr. Claire Erlacher-Reid – Sea World of Florida
Dr. Mark Flint – The Ohio State University
Ms. Theresa Floyd-Rump – Brammer Bio (Alachua, Florida)
Dr. Ruth Francis-Floyd – University of Florida
Dr. Kathleen Hartman – USDA-APHIS
Dr. Jeff Hill – Tropical Aquaculture Lab, University of Florida
Dr. Kathy Heym – Florida Aquarium
Mr. Jim Kinsler – Sea World of Florida
Dr. Ed Noga – Southeastern Aquatechnologies
Dr. Denise Petty – North Florida Aquatic Veterinary Services
Dr. Andy Stamper – Disney Animal Programs
Dr. Natalie Steckler – Seastar Communications and Consulting LLC
Mr. Craig Watson – Tropical Aquaculture Laboratory, University of Florida
Dr. James Wellehan – University of Florida
Dr. Roy Yanong – Tropical Aquaculture Laboratory, University of Florida

Course Goal:

The goal of this class is to introduce students to basic concepts of fish health management including diagnosis of common infectious and non-infectious diseases, strategies for control of infectious disease and preventive health care for captive fish populations. Students will also be expected to develop a basic understanding of zoonotic diseases common in aquarium and cultured fish. Students will be expected to have a fundamental understanding of fish husbandry, disease prevention, be able to interpret findings of infectious disease, be familiar with regulated diseases of fish, understand principles of biosecurity, and quarantine, and appropriate treatment management, including regulations pertaining to use of drugs and chemicals by the time they complete the class. The on-line course will focus on delivery of didactic information using recorded lectures, discussion sections, assigned readings and projects

Course Objectives:

1. Students will be introduced to common families of warm water fish, and will be expected to understand their importance to the aquaculture and aquarium industries. Further, they should have an appreciation for diseases that may be of concern within specific families of fish.
2. Students will be expected to have a basic understanding of fish biology and physiology. They will be expected to understand how disease may alter normal physiologic processes.
3. Students will be expected to know normal anatomy for common families of fish. This may include radiologic interpretation of key anatomical characteristics.

4. Students will learn basic diagnostic techniques for common fish diseases. They should be familiar with routine tissue biopsy and basic microbial culture techniques, and be able to identify common parasites of warm water fish.
5. Students will be expected to know anatomic locations used for blood collection in common fish families.
6. Students will be expected to be familiar with important infectious agents that cause disease in fish. These will include parasitic, bacterial, viral and fungal agents. Students will be expected to know clinical signs associated with specific diseases and understand what steps will be required to confirm a diagnosis.
7. Students will learn the principles of basic water quality management for aquaculture and become familiar with the key components of aquatic system design. They should be able to interpret data provided from water quality tests. They should be able to identify and develop management recommendations for common environmental diseases.
8. Students will be expected to be able to construct a problem list in which they define multiple factors contributing to a fish disease outbreak. They should be able to rank these factors in terms of the threat they pose to the affected population.
9. Students will be expected to understand regulations that pertain to use of drugs and chemicals to treat fish disease in the United States. They should be familiar with resources that provide current information in this rapidly changing area. They should understand proper use of drugs and chemicals and be able to develop appropriate treatment protocols for management of simple fish disease scenarios.
10. Students will become familiar with regulations that pertain to infectious diseases of fish including species of concern, screening techniques, and required reporting.
11. Students will learn basic principles of biosecurity and quarantine, and be able to apply these in the design or assessment of protocols for fish holding facilities.
12. Students will develop a basic understanding of zoonotic diseases of concern for aquarium and cultured warm water fish. They will also understand basic principles of personal protection.

Subjects to be Covered:

- Fish Biology, Anatomy and Physiology
- Freshwater and Marine Systems Design
- Water Quality Analysis and Interpretation
- Common Environmental Diseases of Warm Water Fish
- Diagnostic Procedures
- External Biopsy Techniques
- Necropsy Procedures
- Sterile and Microbial Techniques
- Treatment Protocols and Strategies
- Drug and Chemical Regulations for Fish
- Biosecurity and Quarantine Procedures
- Regulated Diseases
- Fish Parasitology, Identification of Common Parasites, Understanding Common Parasitic Diseases
- Introduction to Bacterial, Viral and Mycotic Diseases of Fish

- Managing Mycobacterium
- Preventive Medicine and Disease Control Strategies
- Common Zoonotic Diseases of Concern and Management Strategies
- Development of Fish Health Management Programs

Grading: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

The course has been divided into six modules. There will be required homework and discussion sections for students along the way. There will be a quiz at the end of each module, and a final comprehensive exam at the end of the course. Grading will be based on homework (20%); participation in discussion sections (10%), quizzes (30%) and a comprehensive final exam (30%). A group project will be assigned to you early in the course. Participation is mandatory and represents 10% of your final grade. Assignments that are turned in late are deducted 10% per day for the first three days, 50% for being a week late, and will not be accepted beyond that point. With that said a lot of students travel and work during the summer. Arrangements for late submission without penalty are routinely offered, but must be negotiated on a case-by-case basis with Dr. Francis-Floyd.

89.5% or higher = A
 85.5 – 89% = B+
 79.5 – 85% = B
 75.5 – 79% = C+
 69.5 – 75% = C
 65.5 – 69% = D+
 59.5 – 65% = D
 < 59.5% = E

E-Learning and Course Materials:

Lecture and course materials will be available on the course E-learning web site. To access the site, go to <https://lss.at.ufl.edu/>, click on the “e-Learning Login” on the left side and log in with your Gatorlink username and password. All students must have access to Dr. Noga’s text, listed below. Some of the homework exercises may be difficult or impossible to complete without this text. Most of you will likely want to retain this book as part of your personal library. Dr. Roberts book is also strongly recommended.

Required Texts:

- *Fish Disease: Diagnosis and Treatment, Second Edition**. By E.J. Noga, 2010. Wiley- Blackwell, Ames Iowa.

*Please note that students will not be able to complete required assignments without access to Dr. Noga’s text.

Recommended Texts:

- *Fundamentals of Ornamental Fish Health*, H.E. Roberts (Editor), 2010, Wiley-Blackwell, Ames, IA.
- *Merck Veterinary Manual, Eleventh Edition*, S.E. Aiello (Editor-In-Chief), 2016, Merck & Company Inc, Pp 1743-1814.

- *Zoo and Wildlife Medicine, Current Therapy, Seventh Edition*, by E. Miller and M.E. Fowler (Eds), 2012, Elsevier. Pp 170-209.

Supplemental Texts:

- *Bacterial Diseases of Fish*, by Inglis, Roberts and Bromages (Eds). 1993. Blackwell.
- *BSAVA Manual of Ornamental Fish, Second Edition*, by Wildgoose (Ed), 2002, Wiley (for British Small Animal Veterinary Association).
- *Fish Diseases and Disorders, Volume 1: Protozoan and Metazoan Infections*, by Woo (Ed), 1995, CAB International.
- *Fish Diseases and Disorders, Volume 2: Non-Infectious Diseases*, by Leatherland and Woo (Eds), 1998, CAB International.
- *Fish Diseases and Disorders, Volume 3: Viral, Bacterial, and Fungal Infections*, by Woo and Bruno (Eds), 1999, CAB International.
- *Fish Medicine*, by Stoskopf (Ed), 1993, Saunders.
- *Health Management and Principal Microbial Diseases of Cultured Fishes*, by J.A. Plumb, 1999, Iowa State University Press.

Policies:

Honesty Policy:

All students registered at the University of Florida have agreed to comply with the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.” In addition, on all work submitted for credit the following pledge is either required or implied: “On my honor I have neither given nor received unauthorized aid in doing this assignment.” To review the student honor code please visit: <http://www.dso.ufl.edu/judicial/honorcodes/honorcode.php>.

Student Evaluation of Instruction:

Evaluations are performed electronically at the end of the course. To evaluate the instructors, visit the UF Evaluation site at: <https://evaluations.ufl.edu/evals/>. We know these are tedious to complete, but because of their importance we ask you to take them seriously. Many aspects of the course have been adapted based upon prior student’s comment and we find all feedback to be helpful.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Policy Related to Make-Up Exams or Other Work:

Because of the applied nature of this class, regular student participation is expected, implying that make-up quizzes and exams are not normally administered.