

## FAS 4405: Aquariums, Water, and Aquaculture

Spring 2021

### **Instructor:**

Dr. Frank A. Chapman, [fchapman@ufl.edu](mailto:fchapman@ufl.edu)  
Fisheries and Aquatic Sciences  
352-273-3602

Office hours are by appointment. However, there is an open door policy for meeting outside of class time. Plenty of outside help is available for this class. Dr. Chapman's office is off-campus at the Fisheries and Aquatic Sciences building (7922 NW 71<sup>st</sup> St.; Center for Aquatic Weeds, Rm 17), therefore students will need to send an email to arrange a meeting time ([fchapman@ufl.edu](mailto:fchapman@ufl.edu)). If you cannot manage the trip off-campus we can accommodate you for a meeting on campus.

### **Course description:**

This course will introduce students to the necessity and interrelation of water as a resource. Water will be covered in the aspects of its importance to biological functions, economics of the resource base, and management. Lectures will cover aspects of the history of aquaculture and aquaria, development of these industries on a regional and global scale, species selection and biology, management practices, economics and marketing, and the sustainability of aquaculture/fisheries practices and their relation to conservation. The course will consist of lectures and in class discussions. Attention to lecture content in the form of notes or tape recordings is highly recommended. Participation in lecture discussions is essential.

### **Program Criteria:**

Meets the criteria as one of the nine credit semester hours for those pursuing the fisheries minor. Meets elective criteria in biological sciences for the Biology Pre-professional degree, Natural Resources Recreation Management option, for School of Natural Resources and Environment, Wildlife Ecology and Conservation, Animal Sciences, Zoology, Agricultural Operations Management, and School of Forest Resources and Conservation.

### **Attendance Policy (20% of the grade):**

For success in this class, attendance is required and will be taken at every class period. Attendance will be taken during the first ten minutes of the class period. Those arriving later will sign a different form after class. Continued tardiness will also affect your grade. If you have **more than two** unexcused absences your final course grade will be lowered half a letter grade. If you have three unexcused absences your grade will be lowered a full letter grade. Emergencies do occur and will be handled on a case-by-case basis. Evidence of excused absences must be provided (e.g., doctor's note, sports note).

**Grades:** final grades will be calculated based on the scale below; **considering the attendance policy (20%).**

<b>Grade Scale</b>	<b>Percent</b>
A	95-100
A-	90-94
B+	85-89
B	80-84
B-	76-79
C+	71-75
C	66-70
C-	60-65
D+	56-59
D	See me before this happens

### Assignments

**Calendar of Due Dates for Assignments** – Calendar will be updated weekly in class. All assignments will be turned in via printed or via e-mail unless otherwise noted. No late work will be accepted. Due to unforeseen happenings, it may be necessary for the course assignment schedule to be altered. The instructor will always strive to be fair about any changes.

<b>Assignments</b>	<b>Percentage of Grade</b>	<b>Details</b>
Journal Article Summaries	20%	Journal article review is due every Other week. First one due 21 Jan.
Species profiles Journal	20%	Species profile is due every Other week. First one due 28 Jan.
"Tech Talk"	2%	Due 29 Jan
Consumer Seafood Guide	8%	Due close to halfway point of the semester; 25 February.
"Program Learning Activities"	8%	Due 11 March
Grant Proposal	14%	Proposal due 15 April.
a. Full text of grant		
b. Poster	4%	Due last week of class, 20 April.
c. Power-talk, 3-min.	4%	Due day of presentation, 20 April.

**Journal summary** – A journal summary of a peer-reviewed article will be due several times throughout the semester. The review and summary should be one page and be included with the journal article abstract. Articles must be chosen from a journal that discusses water related topics such as aquaculture or aquarium issues.

**Species profile** – Species profiles will be prepared for species that are important to either aquaculture or the aquarium trade. These should be approximately three pages and will be due several times throughout the semester. For more information on specific formats for this assignment refer to in class presentations.

**"Program Learning Activities"** – A practical consideration or skill of an activity related to a field in the aquatic sciences. To be presented by each student in class. Maximum allotted time per presentation: 10 minutes.

**Consumer Seafood Guide** – There has been a trend for nonprofit agencies to release various guides for sustainable consumption of seafood. As part of this course you will design your own sustainable seafood guide, which will be done with consideration of safe seafood, economical seafood, and sustainability of fishing and aquaculture practices.

**Grant proposal** – Each student will formulate a grant proposal related to the topic of their choosing around the aquatic sciences disciplines. Examples of grant projects are: an aquaculture business plan, curriculum guide for teaching a specific classroom lesson or lab on aquarium science or aquaculture, design of an aquarium display, design of a laboratory, equipment design and production, or proposed experiment. Traditionally it is an idea associated with an experimental design.

To support the grant, students will summarize their information or research concisely in into a Poster format. Also will give a 3-minute presentation of their work.

**The following list is an example of lecture topics to be covered in class:**

How to get a job in natural resources
Understanding why life evolved around the properties of water
Understanding entropy as related to animal life
All about water quality characteristics
Understanding eutrophication
Understanding water chemistry and all about "hard" water and water softening
Understanding buffers in animals and how they maintain pH in animals
Life support systems in aquaculture and aquaria
The history of zoos and aquariums
Seafood in the 21 <sup>st</sup> century
World seafood use and consumption
Types of aquaculture (intensive, extensive, polyculture, monoculture)
Creating artificial ecosystems
Basic physiology of fish, crustaceans, and mollusks
Nutrition and feeding strategies in fishes
Understanding all about energy "the fire of life" in animals
How do all animals on the planet use energy from the diet?
Reproductive strategies of fish and broodstock development
Fish health and preventative medicine
Conversions made easy

**Required Materials:** no textbook is required.

**Student Accommodations:** students requesting classroom accommodations must first register with the [Disabilities Resources Program](#), located in the Dean of Students Office, P202 Peabody Hall. The Disabilities Resources Program will provide documentation to the student, who must then deliver this documentation to the instructor when requesting accommodations.

**Academic Honesty:** all University of Florida students are required to abide by the University's [Academic Honesty Guidelines](#) and by the Honor Code, which reads as follows: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." Cheating, plagiarism, or other violations of the Academic Honesty Guidelines will not be tolerated and will be pursued through the University's adjudication procedures.