Aquaculture I
FAS 4932 (3 credits) Fall, 2020

Course Description

Provides an overview of the field of aquaculture, including water quality, production systems, nutrition, spawning, and the common fish and invertebrate groups cultured in the United States. The course is entirely web-based, with narrated PowerPoint lectures followed by readings and other resources for each learning topic. Weekly topics are included in asynchronous class discussions.

Instructors

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Office hours: Available by email or phone; office visits available by appointment

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Office hours: Available by email or phone; office visits available by appointment

Student Learning Outcomes

At the end of this course, each student will:
- Have an understanding of the basic principles of aquaculture
- Have an understanding of culture methods for common aquaculture species
- More effectively communicate through scientific writing
- Have a foundation for graduate studies in aquaculture or a career in aquaculture

Course Meeting Times

This course is entirely web-based and students may access lectures, readings, and supporting materials at their own pace. Exams are available only on the dates listed in the syllabus.
Required Texts/Readings

There is no required text for the course. Online readings will be provided for each learning topic (list attached). A computer with internet connection and sound speakers are required. The UF Canvas E-Learning site can be accessed at http://elearning.ufl.edu/ using your Gatorlink account.

Class Format, Policies on Attendance and Make-up Exams

The class is in an asynchronous, web-based format. There are no pre-requisites for taking this course. Attendance records will not be maintained. It is the responsibility of the student to access on-line lectures, readings, quizzes, discussions, and exams and to maintain satisfactory progress in the course. Two exams are scheduled (see schedule below) and are only available on the days scheduled. Missed exams cannot be taken after the scheduled date without prior written consent of the instructor except under exceptional circumstances. Cases of serious illness, bereavement, or activities covered under the Twelve-Day Rule will be considered for make-up. Appropriate documentation must be provided in all cases. Computer or other hardware failures, except failure of the UF E-Learning system, will not excuse students for missing exams. For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352-392-4357 (option 2). A writing or presentation assignment is due. Late assignments will be penalized 10% for the first day and 5% per day thereafter unless prior written arrangements are made or there is an exceptional circumstance.

Assignments

- Learning modules consisting of one or more lectures (narrated PowerPoint or video), readings, supporting material, discussion, and a quiz are provided online for each topic. Learning modules build on previous modules so you should complete the learning modules in the order presented.
- Learning modules covered on the mid-term exam (modules 1-9) are available from the beginning of the semester. Learning modules covered on the final exam (modules 10-20) are available after the mid-term exam. You may access and complete learning modules at your own pace.
- Each learning module will have a narrated PowerPoint presentation/video. Each presentation will have numerous photographs or diagrams and will summarize important information for each topic. You will be able to go back and view and listen to each slide as many times as you wish during the initial viewing of the lecture or at a later date.
- Each learning module has required readings beyond the lecture. This information will be covered on quizzes and exams. These files will all be made available for you to view on your computer, save, or print. There will also be references to additional (optional) readings if you desire further investigation of a topic.
- Most learning modules will have a discussion related to the topic of the module. Students are required to participate in at least 5 discussions in the first half of the
semester (Modules 1-9) and at least 5 in the second half (Modules 10-21). Participation can include posting answers or additional, pertinent questions. A robust discussion rather than a few simple answers will make this a more useful enterprise. In particular, students posing questions/thoughts discussed by other students in the class will provide an excellent learning environment. Instructors and a TA will assist in moderating to ensure a fact-based discussion.

- Each learning module will have a quiz. The questions will require the student to go through the PowerPoint presentation, watch any attached videos, and read the assigned readings to answer the questions correctly. These quizzes will contribute to the grade. Quizzes in Modules 1-9 are taken prior to the Mid-term and quizzes in Modules 10-21 are taken prior to the final exam. All quizzes will be taken from your computer.

- Mid-term and final exams: Each exam will consist of 50 questions. Some of the questions will come directly from the lecture quizzes. These exams will consist of multiple choice questions and maybe a few matching questions. The mid-term will consist of questions from the first half of the learning modules. The final exam will consist of questions from the last half of the learning modules. The exams will be taken on your computer. Exams are only available on the days indicated.

- Graduate students and others registered in FAS 5015 have to complete either a review paper or Voicethread presentation on a pre-approved aquaculture topic. Undergraduates and others registered in FAS 4932 do not have this assignment.

### Evaluation of Student Learning

<table>
<thead>
<tr>
<th>Weight</th>
<th>Description</th>
<th>Points</th>
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<tbody>
<tr>
<td>45% or 205 points</td>
<td>Quizzes</td>
<td>455</td>
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<tr>
<td>11% or 50 points</td>
<td>Discussion participation</td>
<td></td>
</tr>
<tr>
<td>22% or 100 points</td>
<td>Mid-term exam (Learning modules 1-9)</td>
<td></td>
</tr>
<tr>
<td>22% or 100 points</td>
<td>Final exam (Learning modules 10-21)</td>
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455 points total

### Grading Scale

<table>
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<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
<td>≥ 410</td>
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<tr>
<td>B+</td>
<td>85-89.99</td>
<td>387-409</td>
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<tr>
<td>B</td>
<td>80-84.99</td>
<td>364-386</td>
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<tr>
<td>C+</td>
<td>75-79.99</td>
<td>341-363</td>
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<td>C</td>
<td>70-74.99</td>
<td>318-340</td>
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<tr>
<td>D+</td>
<td>65-69.99</td>
<td>296-317</td>
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<tr>
<td>D</td>
<td>60-64.99</td>
<td>273-295</td>
</tr>
<tr>
<td>E</td>
<td>&lt; 60</td>
<td>≤ 272</td>
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Schedule of Class Topics

Learning Modules
1. Introduction to Aquaculture
2. Fish Biology
3. Water Quality Management
4. Recirculating Aquaculture Systems
5. Farm Ponds
6. Net Pens
7. Nutrition and Feed Manufacture
8. Handling and Hauling
9. Spawning
10. Disease
11. Prawns/Shrimp
12. Catfish
13. Hybrid Striped Bass
14. Tilapia
15. Salmonids
16. Freshwater Ornamentals I
17. Freshwater Ornamentals II
18. Marine Ornamentals
19. Marine Baitfish
20. Clams, Oysters, Scallops
21. Other Important Species

Important Dates:
August 31 – Classes start
August 31-October 18 – Modules 1-9 available (Quizzes and Discussions)
October 18-23 – Mid-term exam available
October 19-December 9 – Modules 10-21 available (Quizzes and Discussions)
December 9 – Classes end
December 10-11 – Reading days
December 12-18 – Final exam available

Other Information

Academic Honesty, Software Use, UF Counseling Services, Services for Students with Disabilities

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

The Honor Pledge: 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, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean or Student Honor Court.

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/

  Counseling Services

  Groups and Workshops

  Outreach and Consultation

  Self-Help Library

  Training Programs
Community Provider Database

- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Readings for Aquaculture I

Introduction to Aquaculture

Introduction to Fish Biology

Water Quality Management
Recirculating Aquaculture Systems

Farm Ponds

Net Pens

Feed Manufacture and Nutrition

Handling and Transporting Fish


Spawning

Chapman and Eenennaam. 2007. Sturgeon Aquaculture - Specialized Techniques Determining the Stage of Sexual Maturity in Female Sturgeon for Artificial Spawning: The Egg Polarization Index or PI. University of Florida Fisheries and Aquatic Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences. Document FA153.


Disease


Prawns/Shrimp


Catfish


Hybrid Striped Bass


Tilapia


Salmonids

Cain and Garling. Trout Culture in the North Central Region. U.S. Department of Agriculture North Central Regional Aquaculture Center.


Freshwater Ornamentals I


**Freshwater Ornamentals II**


**Marine Ornamentals**


Marine Baitfish


Other Important Species


Stone et al. 1998. Preparing and Stocking Golden Shiner Fry Ponds. U.S Department of Agriculture, University of Arkansas Cooperative extension Program in Aquaculture and Fisheries. FSA9080-1M-12-98N
Stone et al. Tank Spawning and Hatching of Golden Shiners. 1998. U.S Department of Agriculture, University of Arkansas Cooperative extension Program in Aquaculture and Fisheries. FSA9081-1M-12-98N.