

# 2026 Caribbean Fisheries Professional Development Program

Distance Learning Scholarships in Fisheries Science, Management and Aquaculture



## The 2026 Fall Semester Program

We are pleased to announce for the 2026 fall academic semester, a scholarship program for Gulf and Caribbean-based fisheries professionals to undertake distance learning courses provided by the University of Florida's Fisheries and Aquatic Sciences Program.

Competitive applicant(s) will be offered learning options that include classes in fisheries science, management and aquaculture.

These are challenging graduate-level courses that will reward participants with new knowledge and perspectives in fisheries science, management and aquaculture. Successful completion of this coursework will require substantial commitment on the part of selected applicants and of their government ministry or organization.

We invite previous applicants and participants to reapply.

## Distance Learning (online) Courses Offered

*Applicants will select one course from the following options for Fall 2026.*

1. FAS 6705 – Fisheries & Aquaculture Economics
2. FAS 6355C – Fisheries Management
3. FAS 6357 – Marine Protected Areas
4. FAS 5015 – Aquaculture I
5. FAS 6272 – Marine Ecological Processes

*See course descriptions and requirements appended to this document.*

## Application of Knowledge

To facilitate knowledge sharing and follow-up among program participants and sponsors, scholarship awardees will participate in periodic video-conference meetings with sponsors. Upon successful completion of an individual course, during a trial period, those who achieve the highest academic scholarship may be provided with the option to continue their coursework towards completion of a specialized certificate from the University of Florida in their chosen learning area.

## Award Requirements

Applicants must be employed by a fisheries resource management NGO, ministry, or government agency located in the Gulf and Caribbean region or affiliated with a member state of the Caribbean Regional Fisheries Mechanism (Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands).

At a minimum, applicants must possess a bachelor's degree (e.g., BA or BS) or a professional degree (e.g., Juris Doctorate) from an accredited college or university.

*Candidates must prove fluency in English.*

## Program Sponsors

Florida Sea Grant  
Gulf & Caribbean Fisheries Institute  
UF/IFAS Fisheries & Aquatic Sciences Program  
Caribbean Regional Fisheries Mechanism



## Application Parts

Please format your application according to the following six (A-F) sections.

### A. Contact information

Please provide your:

- Full name
- Full mailing address
- Telephone number
- Email address

### B. Job status

Please describe your current job and professional interests (250-500 words).

### C. Training interests

Please identify the certificate type and course of interest from the choices above. Describe how you will apply new knowledge or skills learned to an ongoing or propose a project that you would like to develop and explain how the implementation of that project would benefit from your participation in this training opportunity (500-750 words).

### D. Letter of endorsement

Please include a letter of endorsement from an individual who is familiar with your professional status and accomplishments.

### E. Educational credentials

Please include a scanned image of your Bachelors, Masters, Ph.D., or other professional degree (e.g., Law) that you earned from an accredited college or university.

### F. Professional accomplishments

Please provide a current resume. Your resume should highlight additional relevant education, training experiences, publications and/or reports, honors and/or awards.



## Submitting Your Application

- All six sections (A-F above) of the application must be labeled, scanned, combined in order, and emailed in Adobe Acrobat format (PDF file) to Florida Sea Grant c/o Dr. Charles Sidman ([csidman@ufl.edu](mailto:csidman@ufl.edu)).
- Applications must be complete. Partial applications will not be accepted.
- Florida Sea Grant will confirm receipt of applications via email at the time they are received.
- Please direct questions regarding this opportunity to Florida Sea Grant c/o Dr. Charles Sidman ([csidman@ufl.edu](mailto:csidman@ufl.edu)) or to the Caribbean Regional Fisheries Mechanism c/o Dr. Sandra Grant ([sandra.grant@crfm.int](mailto:sandra.grant@crfm.int)).

## Application Deadline: June 5, 2026

*Please follow these instructions carefully when preparing your application.*

## Evaluation Criteria and Selection Process

*A panel consisting of program sponsors will evaluate applications according to the following criteria.*

- Quality of your response to training interests (application section C) - 50%
- Strength of the letter of endorsement (application section D) - 25%
- Educational / professional accomplishments (application sections E, F) - 25%

## Important Dates

Application Opens: April 30, 2026

Application Deadline: June 5, 2026

Scholarship Notification: June 26, 2026

Classes Begin: August 20; End: December 11, 2026

# *Aquaculture I*

## *FAS 5015 (3 credits) Fall, 2025*

Includes Continuing Education (CE) requirements

### **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**

*Cortney L. Ohs, Ph.D.*  
[cohs@ufl.edu](mailto:cohs@ufl.edu)  
*UF/IFAS Indian River Research  
and Education Center (IRREC)  
2199 South Rock Road  
Ft. Pierce, FL 34945  
772-577-7348*

*Office hours: Tuesdays, 9:00-  
11:00 am, additional times by  
appointment*

*Jeffrey E. Hill, Ph.D.*  
[jeffhill@ufl.edu](mailto:jeffhill@ufl.edu)  
*UF/IFAS Tropical Aquaculture  
Laboratory (TAL)  
1408 24<sup>th</sup> Street SE  
Ruskin, FL 33570  
813-671-5230 x118*

*Office hours: Thursdays, 2:00-  
4:00 PM, additional times by  
appointment*

### **Teaching Assistant**

*Katie Everett*  
*UF/IFAS Tropical Aquaculture Laboratory (TAL)*  
*1408 24<sup>th</sup> Street SE*  
*Ruskin, FL 33570*

*Office hours: Tuesdays 6:00-8:00 PM every other week, additional times 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 Learning Objectives

At the end of this course, each student will be able to:

- Explain the basic principles of aquaculture
- Describe frequently used techniques in aquaculture
- Describe culture methods for specific aquaculture species that are commonly cultured and economically important
- Communicate effectively through scientific writing
- Discuss scientific concepts with peers thoroughly and professionally
- Critically analyze scientific literature, and discuss its implications in larger contexts and real-world scenarios

## Course Meeting Times

This course is entirely web-based and students may access lectures, readings, and supporting materials largely at their own pace. Exams are available only on the dates listed in the syllabus. Modules 1-9 open prior to the mid-term and modules 10-21 open after the midterm. Assigned discussions within modules have specific due dates that will require completing modules to access discussions. The quiz of each module must be completed to move to the next module.

## Required Texts/Readings

There is no required text for the course. Online readings may be provided for each learning topic (check modules for readings and other learning materials). 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.

## Required Technical and Digital Literacy Skills

Students must be able to:

- Use the Canvas learning platform to complete assignments, quizzes, and exams
- Use Internet or physical resources (e.g. journal articles, books, reports) to gather useful information for assignments
- Utilize online search engines to find credible information for use in assignments
- Cite sources used in assignments appropriately and in the correct format

## 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.

### Continuing Education (CE) student requirements

CE students will complete all learning modules (including lectures, readings, discussions, and quizzes). CE students are NOT required to complete mid-term or final exams, or to complete a paper/presentation.

## **Class Policies on the use of Artificial Intelligence (AI) and Plagiarism**

This course allows AI with limitations. Always be transparent in the use of AI and appropriately cite the source of all information used for assignments, including AI platforms. For example, use AI for searches of basic information, report AI use (including platform) and what it was used for, and preferably look up the information in appropriate primary or secondary sources and properly cite. Minor editing is also an acceptable use of AI. Proper attribution is necessary.

Plagiarism is unacceptable and will result in a point deduction up to and including all points for an assignment, resulting in a potential zero. Generally, plagiarism arises from copying text or using information without properly citing the original work. Use of AI is particularly prone to unintended plagiarism. All use needs to be noted and attributed.

Examples of plagiarism: (1) Using AI without disclosing it, attributing the information to AI, and listing the platform. (2) Failing to properly cite sources of information used in an assignment—if it is not general knowledge, cite a source.

### **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 during the pre-midterm period, starting at the beginning of the semester. Learning modules covered on the final exam (modules 10-21) are available after the mid-term exam. You may access and complete learning modules at your own pace as they are released. Once a module is completed (quiz taken), you will have access to the next module.*
- *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 may have 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.*
- *Learning modules may have a discussion related to the topic of the module. Students are required to participate in all 10 discussions. See the list of modules with discussions and the due dates below. Due to the module/semester schedule, some discussions will overlap in time. 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 and improve student scores. 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.*

#### **Discussion Module and Due Date**

- *3. Water Quality Management – Oct 3*
  - *5. Farm Ponds – Oct 3*
  - *6. Net Pens – Oct 3*
  - *7. Nutrition and Feeding – Oct 3*
  - *9. Spawning – Oct 3*
  - *11. Prawns/Shrimp – Dec 3*
  - *13. Hybrid Striped Bass – Dec 3*
  - *15. Salmonids – Dec 3*
  - *17. Freshwater Ornamentals II – Dec 3*
  - *18. Marine Ornamentals – Dec 3*
- *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. There may be a discussion/long-answer question. 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 will complete either a review paper or Voicethread presentation on a pre-approved aquaculture topic. The review paper or Voicethread presentation should cover all of the following: species, stages of culture, specific culture methods for each stage, system requirements, potential commercial application, current or potential markets. The review paper should be between 8 and 10 pages of text, have complete references, and include appropriate charts, photos, or tables. One or more examples will be provided. If you choose a Voicethread presentation, you will create and narrate a 20-minute PowerPoint presentation and load it on the Voicethread website for all students to view and comment on it, all of the required information for the review paper will also be included in the Voicethread presentation. The review paper or Voicethread presentation will be equivalent to an exam in points.*

<b>Evaluation of Student Learning</b>
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<i>30% or 150 points</i>	<i>Quizzes (total of 205 points available—percentage earned placed on 150-point scale)</i>
<i>10% or 50 points</i>	<i>Discussion participation</i>
<i>20% or 100 points</i>	<i>Mid-term exam (Learning modules 1-9)</i>
<i>20% or 100 points</i>	<i>Writing or Voicethread assignment</i>
<i>20% or 100 points</i>	<i>Final exam (Learning modules 10-21)</i>

*500 points total*

<b>Grading Scale</b>
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Grade	Percentage	Points
A	90-100	≥ 450
B+	85-89.99	425-449
B	80-84.99	400-424
C+	75-79.99	375-399
C	70-74.99	350-374
D+	65-69.99	325-349
D	60-64.99	300-324
E	< 60	≤ 299

## 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

### Midterm

### Important Dates:

*August 21 – Classes start*

*August 21-October 3 – Modules 1-9 available (Quizzes and Discussions)*

*October 4-10 – Mid-term exam available*

*October 4-December 3– Modules 10-21 available (Quizzes and Discussions)*

*November 14 – Writing/Voicethread assignment due*

*December 3 All modules- lectures, quizzes, assignments completed by 11:59PM on Dec 3*

*December 4-5 – Reading days – NO late quizzes or assignments accepted*

*December 6-12 – Final exam available*

### Discussion Module and Due Date

- 3. Water Quality Management – Oct 3
- 5. Farm Ponds – Oct 3
- 6. Net Pens – Oct 3
- 7. Nutrition and Feeding – Oct 3
- 9. Spawning – Oct 3
- 11. Prawns/Shrimp – Dec 3
- 13. Hybrid Striped Bass – Dec 3
- 15. Salmonids – Dec 3
- 17. Freshwater Ornamentals II – Dec 3
- 18. Marine Ornamentals – Dec 3

## 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/](http://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/](http://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/](http://www.dso.ufl.edu/drc/)

### **University Academic Policies and Resources**

For other university-wide policies and campus resources, please visit this link:

<https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

# Marine Ecological Processes

## Online section

### FAS 6272 (3 credits) Fall 2025

#### Course Description

The course covers the ecological, biological, and environmental processes that drive patterns in productivity, behavior, population dynamics, and community structure in marine and estuarine ecosystems.

**Prerequisite:** Two semesters of Biology (BSC 2010 and 2011) or equivalent; General Ecology (PCB 4043) or equivalent; Graduate student status

#### Instructors

Dr. Donald C. Behringer, Professor

Email: [behringer@ufl.edu](mailto:behringer@ufl.edu)

Office: Aquatic Pathology Laboratory, Emerging Pathogens Institute

Telephone: 352-273-3634

Office hours: Tuesday 1 – 2 pm, or by appointment

Mr. Lucas Jennings, PhD student (TA)

Email: [lucas.jennings@ufl.edu](mailto:lucas.jennings@ufl.edu)

Office hours: Online by appointment

#### Student Learning Outcomes

At the end of this course, each student will have:

- Examined how ecological processes operate in the marine environment
- Compared how ecological concepts are unique and similar in the marine environment relative to terrestrial and freshwater ecosystems
- Assessed the function of the environment in marine ecology
- Examined how the biology and ecology of marine organisms interact
- Developed hypotheses for the outcomes of biotic or abiotic perturbations on populations and communities based on understanding of the ecological principles
- Learned the organisms that represent the trophic levels of a marine food web and their interrelationships.
- Examined the role of time and space in marine ecological processes
- Discussed and debated contemporary issues in marine ecology such as conservation, climate change, and disease
- Lead and moderated discussion of primary literature in marine ecology
- Learned how to develop, organize, and present a field-based lesson to the class via live or distance delivery

**Course Meeting Times** Asynchronous – web-based

## **Texts/Readings**

1. Primary literature (1 - 2 journal articles) will be assigned to supplement the material presented each week. The literature will be drawn from current or classic papers and be made available by at least the Friday prior to its coverage the following week. All assigned papers must be read and each student will lead and moderate the online discussion of at least two papers (see below for assignment details).

*Examples include:*

Hutchinson GE. 1961. The paradox of the plankton. *American Naturalist* 882: 137-145.  
Hughes TP, Tanner JE. 2000. Recruitment failure, life histories, and long-term decline of Caribbean corals. *Ecology* 81: 2250-2263.

Cowen RK, Paris CB, Srinivasan A. 2006. Scaling of connectivity in marine populations. *Science* 311: 522-527.

Armstrong JB, Schindler DE. 2011. Excess digestive capacity in predators reflects a life of feast and famine. *Nature* 476: 84-88.

2. Readings from the following text will supplement the material presented in class and be made available to students:

Nybakken JW, Bertness MD (2005) *Marine Biology: An Ecological Approach*. Benjamin Cummings.

## **Course Format, Policies on Attendance and Make-up Exams**

### **Course format:**

This course is intended to provide graduate students with a broad overview of ecological principles operating in estuarine, nearshore coastal, and open ocean systems. The principles introduced will become increasingly complex and interwoven, highlighting the multiplicity of processes driving the patterns observed.

Students will initially be introduced to important primary producers and secondary consumers in each of these systems. Insights into physiological and population levels of organization will build on these basics. Environmental factors that influence species-specific and population-level interactions will be discussed as a transition to the concepts of community organization. All of this material will form a foundation for explaining how the structure and function of communities is maintained over different temporal and spatial scales.

The course will incorporate recorded lecture presentation of the subject matter with online discussions. Upon conclusion of each subject the class will critically discuss primary literature provided by the instructor. Each student will be assigned two weeks to lead and moderate the discussion of the primary literature (see assignment details below).

### **Course delivery:**

This course is co-taught at the undergraduate and graduate levels. Graduate students have additional assignment requirements and are expected to contribute a significantly higher level than undergraduates. Graduate students are also expected to interact with undergraduate students through discussions, presentations, and guidance that will increase learning for both groups and raise the intellectual caliber of the course.

### **Attendance Policy:**

Lectures will be posted within hours after live delivery and will remain accessible for at least two weeks. Students are responsible for viewing the lectures during this period, participating in online discussion sessions while they are active, and for acquiring assignments. Students can only miss a maximum of three (3) discussion sessions. More than this will result in a five (5) point deduction from the final point total for each additional session missed.

### **Make-up Policy:**

Students must request permission to make-up an exam or assignment *prior* to missing it. If prior permission is not granted the student will receive 0 points for the exam. Late assignments **will not** be accepted without prior consent of the instructor. For extenuating circumstances or situations that fall within university policies see the Academic Policies and Resources section below.

## **Assignments**

### **Critical Thinking Questions:**

Critical thinking questions will be posted on set Fridays and students will be required to answer the questions by the following week (see due dates on schedule below). The questions will be drawn from either the lecture material or the assigned reading from the previous weeks. The nature of the questions will vary but will take the materials and concepts covered in class and require the students to adapt and apply that knowledge to solve a problem, plan a research/management approach, or provide a detailed answer, but with a system or problem that is different than discussed in class. The use of creativity and abstract reasoning will be expected. Responses must be submitted via Canvas by 10 pm on the due date. See schedule below for due dates.

### **Field lesson presentation:**

This assignment will help graduate students learn how to present online material to a class in a field setting by requiring them to work as a group (2 – 3) to create and present a field-based video lesson to the class. Students must select a topic by September 4<sup>th</sup> and turn in a plan for their presentation by September 11<sup>th</sup>. **Missing the due date for either is a loss of 5 points on the final presentation grade.** Group presentations are due November 18<sup>th</sup> and must be 8-10 min in length (no longer!). If a group is not possible and an individual project is approved, it must be 5-8 minutes in length (no longer). Detailed instructions and a grading rubric for the project will be provided online. Each student will be graded individually, and the presentations will be graded as follows:

- Content (20 pts)
- Delivery (20 pts)
- Organization (20 pts)
- Originality (20 pts)
- Overall impression (20 pts)

### **Literature Discussion:**

Each week we will have a **live, synchronous online discussion** about the papers assigned for that week. Each graduate student will lead and moderate the discussion of two journal articles during the course of the semester. The instructor and course TA will lead the first discussions, so students are aware of what is expected. As noted above, students can only miss a maximum

of three (3) discussion sessions. More than this will result in a five (5) point deduction from the final point total for each additional session missed. Students will be evaluated on:

- Preparation and knowledge of the material (12.5 pts)
- Organization and flow of discussion (12.5 pts)

**Exams:**

Exam 1 will cover all of the material presented to that point.

Exam 2 will cover all of the material presented in the course (~75% post-Exam 1).

**Evaluation of Student Learning**

100 points	Exam 1
100 points	Field lesson presentation
100 points	Critical thinking questions (4 @ 25 points each)
50 points	Lead primary literature discussion (2 @ 25 points each)
100 points	Exam 2
<b>450 points</b>	<b>TOTAL</b>

**Grading Scale**

Grades will be assigned based on the percentage of the total points earned.

- A = 93 – 100%**
- A- = 90 – 92%**
- B+ = 87 – 89%**
- B = 83 – 86%**
- B- = 80 – 82%**
- C+ = 77 – 79%**
- C = 73 – 76%**
- C- = 70 – 72%**
- D+ = 67 – 69%**
- D = 63 – 66%**
- D- = 60 – 62%**
- E = < 60%**

<b>Schedule of Class Topics</b>	<b>Week of:</b>
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<b>Week 1:</b> Course Introduction, Scheduling, and other Logistics	Aug 21
<b>Week 2:</b> Ocean Properties, Primary Producers, and Primary Production	Aug 26 & 28
<b>Week 3:</b> Primary Production (continued) (Dr. Savanna Barry – guest lecture <i>TBA</i> ) (Group field lesson <i>topic idea due Sep 4</i> )	Sep 2 & 4
<b>Week 4:</b> Introduction to Consumers and Consumer Dynamics (Group field lesson <i>plan due Sep 11</i> )	Sep 9 & 11

<b>Week 5:</b> Resources and Competition ( <i>Question set #1 due Sep 18</i> )	Sep 16 & 18
<b>Week 6:</b> Feeding, Food selection, and Responses to Food	Sep 23 & 25
<b>Week 7:</b> Energy and Production Nutrient Cycles ( <i>Question set #2 due Oct 2</i> )	Sep 30 Oct 2
<b>Week 8:</b> Larval Ecology, Recruitment, and Succession Midterm exam review	Oct 7 Oct 9
<b>Week 9:</b> MIDTERM EXAM Literature discussion	Oct 14 Oct 16
<b>Week 10:</b> Community Structure, Trophic Webs, and Biodiversity (Dr. Robert Lamb - guest lecture <i>Oct 21</i> )	Oct 21 & 23
<b>Week 11:</b> Spatial Structure Connectivity ( <i>Question set #3 due Oct 30</i> )	Oct 28 Oct 30
<b>Week 12:</b> Marine Disease Climate Change	Nov 4 Nov 6
<b>Week 13:</b> <b>No class (Veteran's Day)</b> Conservation and Restoration	Nov 11 Nov 13
<b>Week 14:</b> Biological Invasions View and evaluate graduate student presentations (Dr. Jeff Hill – guest lecture <i>Nov 18</i> ) ( <i>Group field lessons due Nov 18</i> ) ( <i>Question set #4 due Nov 20</i> )	Nov 18 Nov 20
<b>Week 15:</b> <b>No Class (Thanksgiving week)</b>	Nov 25 & 27
<b>Week 16:</b> Final Exam Review	Dec 2
<b>FINAL EXAM 10:00am – 12:00pm</b>	<b>Dec 8</b>

## Additional References

### Web Sites :

Web of Science (<https://www.webofscience.com/wos/woscc/basic-search>)  
 Google Scholar (<https://scholar.google.com/>)

## Academic Policies and Resources

For all general academic policies and student resource information, please visit:

<https://go.ufl.edu/syllabuspolicies>

# FAS 6355c Fisheries Management

Course Syllabus, Fall 2025, 4 Credits

Lectures for all sections: online

Weekly discussion (online): Wednesday 8:00-9:30 PM Eastern, Zoom Meeting

Discussion (on-campus)\*: Wednesday 09:00– 10:30 AM, NZ 222

(\*contingent on participation of at least ten students)

## Course Description

Integrating scientific, social, political and legal factors in fisheries management.

## Overview

Fisheries are an important source of food and recreational opportunities, yet many are in poor shape due to overfishing and/or habitat degradation. Managing fisheries sustainably and restoring fisheries that have been degraded is a complex task that requires a broad set of competencies from fisheries professionals. The course aims to help students develop key competencies including knowledge of essential ecological, social, institutional, and economic dimensions of fisheries management; skills in fisheries systems analysis, interview and social survey techniques, resource assessment and modeling, institutional analysis, participatory planning and reflection-in-action; and a repertoire of case studies. The course also aims to foster motivation for problem solving in an interdisciplinary and participatory manner, critical thinking and innovation. Lectures will be used to outline key concepts and approaches, and laboratories and homework assignments will provide experience in applying key methods. Throughout the course, all students will develop a case study on a fishery of their choice, applying what they have learned, providing concrete examples for class discussions, and eventually providing an independent review and recommendations for the further management of the fishery. Students will also conduct an intervention design practicum aimed at addressing a current fisheries management issue through innovative science and/or professional practice. This interdisciplinary course is intended for graduate or undergraduate students majoring in any subject relevant to fisheries management including fisheries/aquatic science, wildlife, resource economics, geography, and political science.

## Course Objectives

- 1) Appreciate the complex, multi-dimensional nature of fisheries management problems and the benefits of integrative-interdisciplinary approaches to addressing them
- 2) Understand key relevant concepts in the areas of fisheries systems, stakeholder characteristics and behavior, fisheries governance, fish stock dynamics, fisheries economics, and management and planning processes
- 3) Gain practical skills in interview and survey methods, institutional analysis, fisheries

assessment, economic analysis, and participatory planning.

- 4) Gain practical experience in analyzing fisheries management issues in a problem- and outcome-oriented, interdisciplinary manner.
- 5) Strengthen communication skills.
- 6) Gain practical experience in designing an intervention aimed at addressing a current fisheries management issue through scientifically informed professional practice.

### **Teaching and learning approach**

The course involves both, structured lectures and labs/homework assignments and more open-ended, student-driven learning. From you as a student, the course requires enthusiasm for grappling with complex and poorly defined real-world fisheries management issues (“messes”). Many students enjoy these challenges, but some don’t. If you want to be told what to do at all times, are uncomfortable engaging with problems that don’t have a right or wrong answer, then this course may not be for you.

The course is available fully online or in hybrid online and on-campus format, the latter contingent on a minimum of five students participating in the on-campus sessions. All students are expected to attend weekly, synchronous discussion sessions regularly.

### **Instructor**

Dr. Kai Lorenzen, Distinguished Professor of Integrative Fisheries Science  
School of Forest, Fisheries, and Geomatics Sciences,  
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Web Page: <https://fisheriessolutions.org/>  
Office hours: Mondays 11 am to 12 noon or by arrangement

### **Guest lecturers**

Dr. Edward Camp, Associate Professor of Fisheries and Aquaculture Governance, School of Forest, Fisheries, and Geomatics Sciences.

Dr. Chelsey Crandall, Director, Center for Conservation Social Science, Florida Fish and Wildlife Research Institute.

### **Course delivery**

The class is offered in “reverse classroom” mode. Lectures are available online and can be watched at any time within the relevant module. Lectures are complemented with live discussion sessions and various classwork assignments. Weekly discussion sessions held online in Zoom are an essential part of the class, participation is required and graded. All students must upload a personal introduction clip and their case study presentation via the VoiceThread system.

## Outline of topics, lectures/activities and recommended readings

Topic	Lecture/activity	Recommended reading
<b>Class introduction, problem definition and synthesis</b>	Introduction to the course: Course overview, student introductions.	
	Discussion: Importance of fisheries, what do we expect from a 'good' fishery, how do fisheries measure up, what is the role of professionals in achieving good fisheries?	FAO 2020; Gutierrez et al. 2011; Hilborn 2007b; Post et al. 2002; Welcomme et al 2010; Worm et al. 2009; Asche et al. 2018.
	Course synthesis: Problem-solving in fisheries management	
<b>Fisheries systems</b>	Understanding fisheries systems and identifying options for improving outcomes	Degnbol & McCay 2006; Garcia & Charles 2007; Lorenzen 2008
	Case study presentations and discussions	
	Reflective practice in fisheries management	Schön 1983; Sarewitz 2004; Jentoft 2006
<b>Fisheries governance</b>	Fisheries governance	Sutinen 1999; Hilborn et al. 2005; Ostrom 2007; Branch 2009; Fujita et al. 2010; Gutierrez et al. 2011, NOAA 2007
	South Atlantic Fishery Management Council (SAFMC) Meeting: Class will follow selected parts online	Documents will be on <a href="https://safmc.net/">https://safmc.net/</a>
	SAFMC Scientific and Statistical Committee Meeting: Class will follow selected parts online	Documents will be on <a href="https://safmc.net/">https://safmc.net/</a>
	Florida FWC Meeting: Class will follow selected parts via the Florida Cannel	Documents will be on <a href="http://www.myfwc.com">www.myfwc.com</a>
	Reforming fisheries management: change and processes	McCay (1989); Grimes (1996); Harris et al. (2007); Shelley (2012); Wondolleck & Yaffee (2000)
<b>Understanding and</b>	Stakeholders as individuals:	Salas & Gaertner 2004;

<b>engaging stakeholders</b>	values, attitudes, assets and drivers of behavior	Smith et al. 2005; Arlinghaus & Mehner 2006; Hutt & Bettoli 2007
	Qualitative interview studies in fisheries management	Acheson 1982; Weiss 1994; Kuehn et al. 2006; Adkins 2010; Turner 2010; Guion et al. 2011
	Quantitative social surveys (Chelsey Crandall)	Dillman et al. 2009 Crandall et al. 2018; 2019. EDIS 2023
	Stakeholder engagement and workshop facilitation (Chelsey Crandall)	Tierny 2011
	Managing fisheries conflicts (Chelsey Crandall)	Covey 1990; Fisher & Uri 1991, Pomeroy et al. 2007; Pomeroy & Rivera-Guieb 2006
	Communicating Fisheries Science (Chelsey Crandall)	Kaplan & Kaplan 2009, Monroe et al. 2009
<b>Quantitative assessment of fisheries status and management options</b>	Fisheries assessment using biomass dynamics models	Hilborn & Walters 1992 (Ch. 8); Haddon 2001 (Ch. 10); Cooper 2006; Methot 2009; Edwards et al. 2012; Lorenzen et al 2016
	Fisheries assessment: Models and data	Hilborn & Walters 1992 (Ch. 10); Haddon 2001 (Ch. 2, 11); Cooper 2006; Edwards et al. 2012
	Economics of fisheries management (Ed Camp)	Milon et al. 1999; Conrad 1999 (Ch. 3); Whitmarsh 2011 (Ch. 2)
<b>Ecosystem, spatial and recreational fisheries management</b>	Ecosystem-based fisheries management	Francis et al. 2006; Hobday et al. 2011; Rice 2011
	Spatial and place-based fisheries management	Fogarty & Botsford 2007; Lorenzen et al. 2010
	Managing recreational fisheries: do different principles apply?	Radomski 2001; Post et al. 2002; Arlinghaus et al. 2007; Arlinghaus et al. 2019; Johnston et al. 2014; TRCP 2014; Sutinen & Johnston 2003

## **E-learning and distance learning support**

A Canvas site is available. Course material and interactive elements are organized as follows:

### Announcements

- All important announcements are posted on the Canvas site and copied to your email.

### Resources

- Access to resources such as lecture slides and key readings is via a Canvas web interface, organized by module/week.
- Coursework assignments are posted under *Assignments*. Please turn in your coursework through the *Assignments* functionality. (We will accept assignments submitted by email, but only under exceptional circumstances).
- You will receive feedback and grades through the same channel.

### VoiceThread

- Use VoiceThread to upload and view clips, presentations etc.

## **Assessment & Grading**

A variety of different assessment approaches will be used, with emphasis on evaluating understanding of key concepts, development of core skills, critical thinking, and creative problem solving. The different assessments and their weighting are:

Lab reports (4)	30%
Case study presentation	20%
Intervention design practicum	15%
Participation in discussions	15%
Interim exam	<u>20%</u>
Total	100%

## **Coursework requirements**

### Introductory clips

All students are required to upload introductory clips about themselves to Voice Thread.

### Lab/homework assignments

Lab/homework assignments are designed to help students exercise key skills in qualitative interviewing, quantitative social surveys, fisheries assessment, and bio-economic analysis. Reports are due within 2 weeks of the assignment being given.

Four lab/assignment reports are required:

- 1) Qualitative interviews
- 2) Quantitative social surveys
- 3) Fisheries assessment: biomass dynamics modeling
- 4) Bio-economic modeling

Reports should concisely address the questions posed in the assignments in writing, supported by pertinent figures and/or tables. It is not necessary to provide introductory material or describe methods, though knowledge and understanding of both should be evident in the presentation and interpretation of results. Lab reports will normally be around 3-5 pages in length.

Grading criteria: The report answers all questions posed in the assignment in a clear and concise manner. Text is supported by key figures and/or tables, all of which are appropriately labeled, described in a legend and referenced in the text. Interpretation of results shows good understanding of the underlying concepts and methods.

#### Integrative fisheries case study

All students will develop an integrative case study on a fishery or a fisheries-related natural resource of their choice. Where appropriate, students are encouraged to select problems related to their research or professional practice. The aim of the case study is to conduct and present an integrative-interdisciplinary analysis of the outcomes of a fishery, the factors that led to these outcomes, options for improving management (or sustaining positive outcomes), and generic lessons that can be learned from the case study. Taken together, the case studies will become part of the student's 'repertoire'.

In the spirit of reflective practice, students will develop the case study in multiple steps interspersed with feedback and reflection.

- 1) Identification of case study topic
- 2) Completion of an information checklist summarizing key information on all attributes of the case study and information sources
- 3) Instructor feedback
- 4) Initial case study presentation (VoiceThread)
- 5) Peer and instructor feedback
- 6) Final case study presentation (VoiceThread)

Grading criteria: The presentations provide a clear, integrative and concise assessment of the fishery, possible management responses, and any generic lessons that can be learned from this specific case. Statements are appropriately supported by reference to publications, information from stakeholders, or personal observations. The presentation shows ability to synthesize and critically evaluate information.

## Intervention design practicum

In the practicum, students design an intervention aimed at addressing a fisheries management problem through innovative professional practice.

Intervention design involves:

- a clear analysis of the management problem
- a realistic appreciation of what the proposed intervention will contribute to addressing the problem and over what time scale
- a set of well-designed, scientifically and professionally sound, and fully developed intervention activities
- an assessment of resources required to implement the intervention (budget, personnel, etc.)

Proposed interventions may include e.g. interview studies or social surveys, modeling studies involving interaction with stakeholders, conducting stakeholder workshops, or development of educational materials. All proposed activities must be grounded in sound science and professional practice.

The intervention design practicum is conducted in four steps:

- (1) Drafting of a pre-proposal
- (2) Class discussion of pre-proposals
- (3) Development and submission of the final proposal.

The pre-proposal should be about 3 pages in length and include: (a) background; (b) problem definition; (c) aims and objectives; (d) activities; (e) timeline; (f) outputs (g) intended contributions of the intervention to addressing the problem identified. The full proposal should follow the same format and be about 5 pages in length, plus appendices.

Grading criteria: the management problem is clearly identified; the intervention is clearly described, of appropriate scope, and designed to a high standard.

## Interim exam

A 'take-home' interim exam will be held in week 11. The exam is open-book and will consist of essay questions.

## Discussion meetings

Discussion meetings are held weekly for all students. The meetings are synchronous voice meetings in Zoom or in-person (when offered) with occasional screen sharing. The purpose of the meetings is to discuss the topics covered in lectures, lab/homework assignments and any other issues or questions that may arise in the course of the class.

## Schedule

*Note: details of the schedule may change in response to external circumstances or pedagogical needs of the course. Always check Canvas for the most current version.*

<b>Week (starting)</b>	<b>Lectures</b>	<b>Lab/ assignment</b>	<b>Integrative case study</b>	<b>Design practicum</b>
<b>1 (8/18)</b>	Fisheries Management: Introduction	Introductory clip on VoiceThread		
<b>2 (8/25)</b>	Understanding Fisheries Systems (I & II)  Qualitative Interview Studies in Fisheries Management			
<b>3 (9/01)</b>	Fisheries Governance (I, II & III)	Assignment Interviewing opens		
<b>4 (9/08)</b>	Stakeholders as Individuals (I & II)  Social Survey Design and Implementation (CAC)		Topic	
<b>5 (9/15)</b>	Engaging Stakeholders: Meetings and Workshops (CAC)  <i>SAFMC Council Meeting 9/15-19</i>	Assignment Social Surveys opens		
<b>6 (9/22)</b>	Fisheries Assessment Using Biomass Dynamics Models (I & II)		Information checklist	
<b>7 (9/29)</b>	Ecosystem-Based Management  Spatial and Place-Based Management	Assignment Biomass Dynamics opens		
<b>8 (10/06)</b>	Case study presentations  Synthesis of presentations		Presentation (due 10/06)	
<b>9 (10/13)</b>	Fisheries Economics (EVC)  <i>SAFMC Snapper-Grouper AP Meeting 10/14-16</i>		<i>Peer feedback on pres.</i>	

Week (starting)	Lectures	Lab/ assignment	Integrative case study	Design practicum
10 (10/20)	Reforming Management: Change and Process  Reflective Practice in Fisheries Management  <i>SAFMC SSC Meeting 10/21-23</i>	Assignment Economics opens		
11 (10/27)	Managing Recreational Fisheries  Recreational Fisheries Allocation			<i>Peer feedback on pre-prop.</i>
12 (11/03)	Interim exam (open 11/02-11/11) <i>FWC Commission Meeting 11/5-6</i>			
13 (11/10)	Managing Fisheries Conflicts  Communicating Fisheries Science			Pre-proposal (due 10/17)
14 (11/17)	Discussion on design projects			
15 (11/24)	<b>No lectures or discussion meetings (Thanksgiving)</b>			
16 (12/01)	Class Synthesis: Problem-Solving in Fisheries Management		Final presentation (due 12/05)	Final proposal (due 12/05)

### Textbooks

There are no required textbooks.

### Academic Policies

For academic policies, please follow this link:

<https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

## Key readings

- Acheson, J.M. (1975) Fisheries management and social context: the case of the Maine lobster fishery. *Transactions of the American Fisheries Society* 104: 653-668.
- Adkins, T.J. (2010) Fishing for masculinity: Recreational fishermen's performances of gender. M.A. Thesis, Kent State University. 64pp.
- Allison, E.H. & Ellis, F. (2001) The livelihoods approach and management of small-scale Fisheries. *Marine Policy* 25: 377-388.
- Arlinghaus, R. & Mehner, T. (2006) Determinants of management preferences of recreational anglers in Germany: Habitat management versus fish stocking. *Limnologica* 35: 2-17.
- Arlinghaus, R. et al. (2007) Understanding the complexity of catch-and-release in recreational fishing: an integrative synthesis of global knowledge from historical, ethical, social, and biological perspectives. *Reviews in Fisheries Science* 15: 75-167.
- Arlinghaus, R. et al. (2019) Opinion: Governing the recreational dimension of global fisheries. *Proceedings of the National Academy of Sciences* 116: 5209-5213.
- Asche, F. et al. (2018). Three pillars of sustainability in fisheries. *Proceedings of the National Academy of Sciences* 115: 11221-11225.
- Branch, T. (2009) How do individual transferable quotas affect marine ecosystems? *Fish and Fisheries* 10: 39-57.
- Charles, A.T. (2001) *Sustainable Fishery Systems*. Oxford: Blackwell Science.
- Conrad, J.M. (1999) *Resource Economics*. Cambridge University Press.
- Cooper, A. (2006) *Guide to Fisheries Stock Assessment: from Data to Recommendations*. University of New Hampshire/NH Sea Grant.
- Covey, S.R. (1990) Principles of Empathic Communication. In *The Seven Habits of Highly Effective People*. New York: Simon and Schuster.
- Crandall, C.A.C., Garlock, T.M. & Lorenzen, K. (2018) Understanding resource-conserving behaviors among fishers: barotrauma mitigation and the power of subjective norms in Florida's reef fisheries. *North American Journal of Fisheries Management* 38: 271-280.
- Crandall, C.A.C., Monroe, M.C., Dutka-Gianelli, J. & Lorenzen, K. (2019) Meaningful action gives satisfaction: Stakeholder perspectives on participation in the management of marine recreational fisheries. *Ocean and Coastal Management* 179: 104872.
- Dillman, D.A., Smyth, J.D. & Christian, L.M. (2009) *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Wiley: Hoboken, N.J. 499 pp.
- Degnbol, P., & McCay, B. J. 2006. Unintended and perverse consequences of ignoring linkages in fisheries systems. *ICES Journal of Marine Science* 64: 793-797.
- EDIS (2023) Savvy Survey Series [https://edis.ifas.ufl.edu/collections/series\\_savvy\\_survey](https://edis.ifas.ufl.edu/collections/series_savvy_survey)
- Edwards C.T.T., Hillary R.M., Levontin P., Blanchard J. & Lorenzen K. (2012) Fisheries assessment and management: a synthesis of common approaches with special reference to deepwater and data-poor stocks. *Reviews in Fisheries Science* 20: 126-153.
- Essington, T.E., Beaudreau, A.H. & Wiedenmann, J. (2006) Fishing through marine food webs. *Proceedings of the National Academy of Science* 103:3171-3175.
- FAO (2024) State of World Fisheries and Aquaculture. Rome, FAO.  
<https://doi.org/10.4060/cd0683en>

- Fisher, R. and W. Ury. 1991. *Getting to Yes: Negotiating Agreement Without Giving In*. Chapters 1 and 3.
- Fogarty, M.J. & Botsford, L.W. (2007) Population connectivity and spatial management of marine fisheries. *Oceanography* 20: 112-123.
- Francis, R.C., Hixon, M.A., Clarke, M.E., Murawski, S.A. & Ralston, S. (2007) Ten commandments for ecosystem-based fisheries Scientists. *Fisheries* 32: 217-233.
- Fujita, R.M., Honey, K.T., Morris, A., Wilson, J.R. & Russell, H. (2010) Cooperative strategies in fisheries management: integration across scales. *Bulletin of Marine Science* 86: 251-271.
- Garcia, S.M. & Charles, A.T. (2008) Fishery systems and linkages: implications for science and governance. *Ocean and Coastal Management* 51: 505-527.
- Garcia, S. & Rosenberg, A. (2010) Food security and marine capture fisheries: characteristics, trends, drivers and future perspectives. *Philosophical Transactions of the Royal Society B* 365: 2881-2896.
- Grimble, R. & Wellard, K. (1997) Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities *Agricultural Systems* 55: 173-193
- Grimes, S.R. (1996) The 1994 net ban constitutional amendment: A case study of fisheries management in Florida. M.S. Thesis, Texas A&M University.
- Gutierrez, N.L., Hilborn, R. & Defeo, O. (2011) Leadership, social capital and incentives promote successful fisheries. *Nature* 470: 386-389.
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- Harris, J.M. et al. (2008) Redressing access inequities and implementing formal management systems for marine and estuarine subsistence fisheries in South Africa. In: *Fisheries Management: Progress Towards Sustainability* (Ed. T.R. McClanahan & J.C. Castilla). Wiley.
- Hilborn, R. (2007a) Defining success in fisheries and conflicts in objectives. *Marine Policy* 31: 153-158.
- Hilborn, R. (2007b) Moving to sustainability by learning from successful fisheries. *Ambio*, 36: 296-303.
- Hilborn, R. & Walters, C. (1992) *Quantitative Fisheries Stock Assessment*. New York: Chapman & Hall.
- Hilborn, R., Orensanz, J.M. & Parma, A.M. (2005) Institutions, incentives and the future of fisheries. *Philosophical Transactions of the Royal Society B*, **360**: 47-57.
- Hobday et al. (2011) Ecological risk assessment for the effects of fishing. *Fisheries Research* 108: 372-384.
- Hutt, C.P. & Bettoli, P.W (2007) Preferences, Specialization, and Management Attitudes of Trout Anglers Fishing in Tennessee Tailwaters. *North American Journal of Fisheries Management* 27: 1257-1267.
- Jentoft, S. (2006) Beyond fisheries management: The *Phronetic* dimension. *Marine Policy* 30: 671-680.
- Johnston, F.D., Arlinghaus, R. & Diekmann, U. (2013) Fish life history, angler behaviour and optimal management of recreational fisheries. *Fish and Fisheries* 14: 554-579.

- Kaplan, S. & Kaplan, R. (2009) Creating a larger role for environmental psychology: The Reasonable Person Model as an integrative framework. *Journal of Environmental Psychology* 29: 329-339.
- Kuehn, D.M., Dawson, C.P. & Hoffman, R. (2006) Exploring fishing socialization among male and female anglers in New York's Eastern Lake Ontario area. *Human Dimensions of Wildlife: An International Journal* 11: 115-127
- Lorenzen, K. (2008) Understanding and managing enhancement fisheries systems. *Reviews in Fisheries Science* 16:10-23.
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- Lorenzen, K. et al. (2016). Stock assessment in inland fisheries: a foundation for sustainable use and conservation. *Reviews in Fish Biology and Fisheries* 26: 405-440.
- McCay, B.J. (1989) Co-management of a clam revitalization project: the New Jersey "spawner sanctuary" project. In: *Co-operative Management of Local Fisheries* (Ed. E. Pinkerton). UBC Press.
- Methot, R. D. (2009). Stock assessment: operational models in support of fisheries management. In *The Future of Fisheries Science in North America* (pp. 137-165). Springer, Dordrecht.
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- Pomeroy, R.S. & Berkes, F. (1997) Two to tango: the role of government in fisheries co-management. *Marine Policy* 21: 465-480.
- Pomeroy, R.S. & Rivera-Guieb, R. (2006) *Fishery Co-Management: A Practical Handbook*. Wallingford, CABI Publishing.
- Pomeroy, R. et al. 2007. Fish wars: conflict and collaboration in fisheries management in Southeast Asia. *Marine Policy* 31: 645-656.
- Post, J.R. et al. (2002): Canada's recreational fisheries: the invisible collapse? *Fisheries* 27: 6-17
- Prager, M.H. & Shertzer, K.W. (2010) Deriving acceptable biological catch from the overfishing limit: implications for assessment models. *North American Journal of Fisheries*

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- Radomski, P.J., Grant, G.C., Jacobson, P.C. & Cook, M.F. (2001). Visions for recreational fishing regulations. *Fisheries* 26: 7-18.
- Rice, J. (2011) Managing fisheries well: delivering the promises of an ecosystem approach. *Fish and Fisheries* 12, 209-231.
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- Sarewitz, D. (2004) How science makes environmental controversies worse. *Environmental Science & Policy* 7: 385-403.
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- Smith L.E.D., Nguyen-Khoa, S. & Lorenzen, K. (2005) Livelihood functions of inland fisheries: policy implications in developing countries. *Water Policy* 7: 359-383.
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- Turner, D.W. (2010) Qualitative interview design: a practical guide for novice investigators. *The Qualitative Report* 15(3): 754-760. <http://www.nova.edu/ssss/QR/QR15-3/qid.pdf>
- Walters, C.J. (2007) Is adaptive management helping to solve fisheries problems? *Ambio* 36: 304-307
- Weiss, R.S. (1994) *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. Simon & Schuster, New York.
- Welcomme, R.L., Cowx, I.G. Coates, D. Béné, C., Funge-Smith, S., Halls, A.S. & Lorenzen, K. (2010) Inland capture fisheries. *Philosophical Transactions of the Royal Society B* 365: 2881-2896.
- Whitmarsh, D. (2011) *Economic Management of Marine Resources*. London: Earthscan.
- Wondolleck, J.M. & Yaffee, S.L. (2000) Making Collaboration Work: Lessons from Innovation in Natural Resource Management. Island Press. (Summary article in: *Conservation in Practice* 1: 17-24).
- Worm, B. et al. (2009) Rebuilding global fisheries. *Science* 325: 578-585.
- Young, E., & Quinn, L. (2002) *Writing Effective Public Policy Papers: Guide for Policy Advisers in Central and Eastern Europe*. Local Government and Public Service Reform Initiative.

# FAS 6705 Fisheries and aquaculture: An economics perspective

## 1 Course Overview

### Short description:

This course introduces students to important issues in fisheries and aquaculture management from an economic perspective, exploring the incentives of various stakeholders in utilizing and conserving fisheries resources, as well as the impacts and effects of differing management systems on industry and ecosystems. Appropriate for students with little or no background in economics or fisheries sciences.

## 2 Overview

In many ways the oceans and our waterways are the last frontier. Fisheries are the last major hunting industry, and fishing is also an important recreational activity. During recent decades, global aquaculture production has exploded and has now surpassed fisheries as a source for food, primarily due to new technologies and knowledge that create new opportunities. At the same time, these evolving industries create new pressures on the ecosystem.

To a large extent, the use of the ocean and water resources is about exploiting economic opportunities, given the constraints provided by the natural resources in the system. Since these opportunities involve the use of public natural resources, it is not surprising that there are a number of conflicts between different user groups such as aquaculture producers, commercial fishers, conservationists, consumers, environmentalists, fisheries managers and recreational fishers.

Lectures and discussions are used to introduce students to key concepts and methods, and follow-up discussions will be provided in class. Please note that there will not be a class every week. The class dates can be found in Section 5. Prepared questions are encouraged for class participation.

- 3 Credits
- Fall 2025
- Pre-recorded lectures with face-to-face class meetings (synchronous virtual participation available). Class meetings will be Tuesdays at 4.05pm at NZH 222 at the scheduled dates.
- Canvas site is available at <http://ufl.instructure.com> or <http://elearning.ufl.edu>

**Course Prerequisites:** None

**Instructor:** Dr. Frank Asche (Professor), G099 at McCarty B, email: [frank.asche@ufl.edu](mailto:frank.asche@ufl.edu)

- Office hours: Tuesdays, 2-4. Additionally available by email or phone by appointment.

**Textbook(s) and/or readings:** There is no required text for the course. Selected readings from primary literature are included in Reading List below.

### 3 Learning Outcomes

At the end of this course, each student will be able to:

- Describe economic opportunities in the production, use and conservation of seafood resources.
- Describe ways fishers and aquaculturists may create environmental externalities that lead to exploitation of the ecosystem.
- Describe methods by which management systems can protect natural resources.
- Analyze the impacts of management systems design relative to various stakeholder interests.
- Analyze the economic and market effects of various management systems.
- Evaluate costs and benefits associated with various uses of fisheries and coastal resources.
- Evaluate the impact of international trade on fisheries and coastal resources.

### 4 Course Logistics

Students may access lectures, assignments, readings, and supporting materials through the course Canvas site as they become available.

#### Technology Requirements:

- A computer or mobile device with high-speed internet connection.
- A webcam, headset and/or microphone, and speakers.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. [What browser am I using?](#)
- Installation of proctoring software may be required and will be provided if so.

**Synchronous online sessions may be recorded.** By sharing your video, screen, or audio during any synchronous online class sessions, you are consenting to being recorded for the benefit of students who cannot attend live as well as for class review during the current semester. If you have special circumstances or concerns about privacy, it is your responsibility to discuss it with your instructor.

#### 4.1 Description of Assessments & Activities

##### Reading Reflections.

Throughout the semester, you will be expected to complete four (4) of six (6) possible reflection papers on assigned readings. These reflections should be 1-2 pages in length and should provide evidence of critical thinking about the literature with clear evidence of basing the arguments in the recommended readings, questions you may have in relation to the topic, unaddressed issues in the science or policy, etc. Citation is required, and additional references to the required readings are encouraged but not required.

- Each reflection is worth 11.25% of the total grade for a total of 45%.

### Reflection topics

1. Why is so much seafood traded? Discuss the importance of demand as well as supply factors:

Due date: September 26, 2025

2. Fisheries management: Is an outcome that is environmentally, economically and socially sustainable possible?

Due date: September 26, 2025

3. Recreational fisheries: Are they different?

Due date: October 23, 2025

4. Aquaculture: Good, bad or a mix depending on technologies, markets, etc.?

Due date: October 23, 2025

5. Is there any reason to believe the sustainable seafood movement makes any difference? If so, how?

Due date: November 20, 2025

6. Discuss one topic based on the lecture series.

Due date: November 20, 2025

### Case Study Project/Writing Assignment.

A significant portion of the grade is a paper where the student chose a case to analyze based on the materials provided in the course. This paper will be split into two (2) submissions:

- Initial topic and case study site selection (participation grade), Due date: September 28, 2025
- Final paper (50%), including at least the following sections:
  - Introduction
  - Background
  - Analysis
  - Recommendations
  - References

The final submission should be between 10-15 pages not including references. Use correct *Marine Resource Economics* journal style for citations and writing. See rubric in Canvas Assignments for more details.

Due date: December 11, 2025

### Participation.

Attendance at all course meetings (virtual or face-to-face) is expected.

## 4.2 Grades & Grading Scale

5%	Initial topic submission, and participation in discussions
45%	Reflection papers (4 required out of 6 possible, 11.25% each)
50%	Case study: Final submission of complete case study

Grades will be allocated as: A (93-100%), A- (90-92%), B+ (88-89%), B (81-87%), B- (78-80%), C+ (74-77%), C (67-73%), C- (63-66%), D+ (59-62%), D (55%-58%), D- (51-54%), E (<50%). Rounding to the nearest whole.

For information on current UF policies for assigning grade points, see

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## 5 Learning Content

Lecture no.	Topics
1	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Important challenges for utilization and conservation of seafood</li> <li>• Background on some of the conflicts</li> <li>• The economic incentives: Opportunities and challenges</li> <li>• Lecture available: August 22; Class: August 26.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Overview of global and U.S. seafood production and consumption including aquaculture and fisheries as production technologies</li> <li>• Overview of global seafood production</li> <li>• Why trade?</li> <li>• Livelihoods and communities</li> <li>• Lecture available: August 22; Class: September 2.</li> </ul>
3	<ul style="list-style-type: none"> <li>• The tragedy of the commons, causes and consequences</li> <li>• The benefits of regulating fisheries in the environmental and economic dimensions</li> <li>• Lecture available: August 29; Class: September 9.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Fisheries regulations and incentives</li> <li>• Command and control</li> <li>• The race to fish</li> <li>• Overcapacity and subsidies</li> <li>• Lecture available: September 5; Class: September 16.</li> </ul>
5	<ul style="list-style-type: none"> <li>• Fisheries regulations and incentives</li> <li>• Individual Fishing Quotas</li> <li>• Quota Transferability</li> <li>• Lecture available: September 12; Class: September 16.</li> </ul>
	Reading reflections
6	<ul style="list-style-type: none"> <li>• Recreational fishing</li> <li>• Conservation and hatcheries</li> <li>• Competition between recreational and commercial fishers</li> <li>• Lecture available: September 26; Class: September 30.</li> </ul>
7	<ul style="list-style-type: none"> <li>• Aquaculture: Farming not hunting</li> <li>• Why does aquaculture production grow so rapidly?</li> <li>• Lecture available: October 3; Class: October 7.</li> </ul>

8	<ul style="list-style-type: none"> <li>• Aquaculture: Environmental issues, regulation and livelihoods</li> <li>• Why is not much farmed fish being produced in the U.S.?</li> <li>• Lecture available: October 10; Class: October 14.</li> </ul>
	Reading reflections
9	<ul style="list-style-type: none"> <li>• Markets</li> <li>• Lecture available: October 18; Class: October 28.</li> </ul>
10	<ul style="list-style-type: none"> <li>• Supply chains</li> <li>• Lecture available: October 23; Class: October 28.</li> </ul>
	Reading reflections
11	<ul style="list-style-type: none"> <li>• Seafood trade</li> <li>• Lecture available: October 30; Class: November 18.</li> </ul>
12	<ul style="list-style-type: none"> <li>• The sustainable seafood movement</li> <li>• Eco-labeling</li> <li>• Lecture available: November 6; Class: November 18.</li> </ul>
13	<ul style="list-style-type: none"> <li>• Illegal, unreported and unregulated (IUU) fishing</li> <li>• High-seas stocks: Exploitation and management</li> <li>• Lecture available: November 13; Class: November 18.</li> </ul>
14	Work on final paper. Class: Tue, Dec 2

## 6

### 6.1 Readings

#### Lecture 1.

Asche, F. and M.D. Smith (2018) Induced Innovation in Fisheries and Aquaculture. *Food Policy*. 76(April), 1-7.

Love, D.C., F. Asche, Z. Conrad, R. Young, J. Harding, R. Neff (2020) Food Sources and Expenditures for Seafood in the United States. *Nutrients*, 12(6), 1810.

Love, D.C., F. Asche, R. Young, E.M. Nussbaumer, J.L. Anderson, R. Botta, Z. Conrad, H.E. Froehlich, T.M. Garlock, J.A. Gephart, A. Ropicki, J.S. Stoll, A.L. Thorne-Lyman (2022) An Overview of Retail Sales of Seafood in the United States, 2017-2019. *Reviews in Fisheries Science and Aquaculture*. 30(2), 259-270.

#### Lecture 2.

Asche, F. C. A. Roheim and M.D. Smith (2014) Markets, Trade, and Seafood. In *Encyclopedia of Natural Resources* (ed Y. Wang). CRC Press, pp. 791-797.

Knapp, G. (2017) A fishy introduction to Economics. Unpublished manuscript.

Filipski, M., and B. Belton (2018) Give a Man a Fishpond: Modeling the Impacts of Aquaculture in the Rural Economy. *World Development* 110, 205-223.

Lectures 3-5.

Hardin, G. 1968. The Tragedy of the Commons. *Science* 162:1243-47.

Ostrom, E. 1999. Coping with tragedies of the commons. *Ann. Rev. Polit. Sci.* 2: 493–535.

Wilén, J. E. (2006) “Why Fisheries Management Fails: Treating Symptoms Rather than Causes”, *Bulletin of Marine Science*, 78: 529-546.

Asche, F., J. L. Anderson and T. M. Garlock (2018) Food from the water – Fisheries and Aquaculture. In G.L. Kramer, K.P. Paudel and A. Schmitz (ed.) *The Routledge Handbook of Agricultural Economics*. Routledge, NY, pp. 134-159.

Lecture 7.

Fenichel, E., J. K. Abbott and B. Huang (2013) Modelling angler behaviour as a part of the management system: synthesizing a multi-disciplinary literature. *Fish and Fisheries*, 14, 137-157.

Arnarson, R (2012), *Managing Commercial and Recreational Fisheries: Issues and challenges*

Lectures 8-9.

Asche, F., J. L. Anderson and T. M. Garlock (2018) Food from the water – Fisheries and Aquaculture. In G.L. Kramer, K.P. Paudel and A. Schmitz (ed.) *The Routledge Handbook of Agricultural Economics*. Routledge, NY, pp. 134-159.

Asche, F. (2008) Farming the Sea. *Marine Resource Economics*, 23(4), 527-547.

Garlock, T., F. Asche, J.L. Anderson, T. Bjørndal, G. Kumar, K. Lorenzen, A. Ropicki, M. D. Smith and R. Tveterås (2020) A Global Blue Revolution: Aquaculture Growth across Regions, Species, and Countries. *Reviews in Fisheries Science and Aquaculture*. 28(1), 107-116.

Knapp, G., & Rubino, M. C. (2016). The political economics of marine aquaculture in the United States. *Reviews in Fisheries Science and Aquaculture*, 24(3), 213–229.

Kobayashi, M., Msangi, S., Batka, M., Vannuccini, S., Dey, M. M., & Anderson, J. L. (2015). Fish to 2030: The role and opportunity for aquaculture. *Aquaculture Economics & Management*, 193, 282-300.

Naylor, R.L., Hardy, R.W., Buschmann, A.H., Bush, S.R., Cao, L., Klinger, D.H., Little, D.C., Lubchenco, J., Shumway, S.E., and Troell, M. A 20-year retrospective review of global aquaculture. *Nature*, **591**, 551 (2021).

Tveterås, S. (2002). Norwegian salmon aquaculture and sustainability: The relationship between environmental quality and industry growth. *Marine Resource Economics* 17(1): 121–132.

Lectures 10-12.

Anderson, J.L. (2002). Aquaculture and the future. *Marine Resource Economics* 17(2): 133–152.

Asche, F., J. L. Anderson and T. M. Garlock (2018) Food from the water – Fisheries and Aquaculture. In G.L. Kramer, K.P. Paudel and A. Schmitz (ed.) *The Routledge Handbook of Agricultural Economics*. Routledge, NY, pp. 134-159.

Lecture 13-14.

Fonner, R., & Sylvia, G. (2015). Willingness to Pay for Multiple Seafood Labels in a Niche Market. *Marine Resource Economics*, Vol. 30, 51-70.

Roheim, C. A. An Evaluation of Sustainable Seafood Guides: Implications for Environmental Groups and the Seafood Industry. *Marine Resource Economics* 24, 301-310 (2009).

Trusty, M. F. Environmental improvement of seafood through certification and ecolabelling: theory and analysis. *Fish and Fisheries* 13, 1-13

## 7 Policies and Requirements

This course plan and syllabus are subject to change in response to student and instructor needs. Any changes will be clearly communicated in advance through Canvas. The most current information on CALS policies can be found here: <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

### 7.1 Late Submissions & Make-up Requests

It is the responsibility of the student to access on-line lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

## 7.2 Communication Courtesy and Professionalism

Just as in any professional environment, meaningful and constructive dialogue is expected in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. **Respect for individual differences and alternative viewpoints will be maintained in this class at all times.** All members of the class are expected to follow rules of common courtesy, decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points and/or referral to the Dean of Students' Office.

## 7.3 Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

**At approximately the mid-point of the semester**, the School of Forest Resources & Conservation will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

**At the end of the semester**, students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## 7.4 Academic Honesty Policy

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following 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."*

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct or appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

## 7.5 Inclusive Learning Environment

This course embraces the University of Florida's Non-Discrimination Policy, which reads,

*The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.*

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website:

<http://multicultural.ufl.edu>.

## 7.6 Services for 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. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

## 7.7 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.

# 8 Campus Helping Resources

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu) | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

## 8.1 Student Life, Wellness, and Counseling Help

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.

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>

- Career Connections Center <http://career.ufl.edu/>
- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.

## 8.2 Student Complaint Process

The School of Forest Resources & Conservation cares about your experience and we will make every effort to address course concerns. We request that all of our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFRC Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Students in online courses: <http://www.distance.ufl.edu/student-complaint-process>
- Students in face-to-face courses: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>

# Marine Protected Areas- FAS 6357

## Overview

Presents the history and logic of marine protected areas (MPAs) and their advantages and disadvantages. The science of MPAs will be explained as well as an overview of traditional approaches of fisheries management. The importance of ecological principles when creating an MPA will be emphasized. An overview of sampling theory and the need for empirical data to document the success or failure of MPAs will be presented.

- 3 credits
- Fall Semester
- 100% Online
- <http://elearning.ufl.edu/>

**Instructor:** Dr. Nick Funicelli

- Please use the Canvas message/Inbox feature for fastest response.
- Office hours: Monday, Wednesday Friday 1:00 to 3:00 via Zoom. I am also available by appointment email or call me to arrange: [jungian7@gmail.com](mailto:jungian7@gmail.com) | CELLS: 352.328.4583 ; 352-872-8998 PLEASE NOTE LEAVE MESSAGES AT ANY NUMBER
- Can also arrange a Skype

**Teaching Assistant:** Abigail Belchoir (she/her)

- Please use the Canvas message/Inbox feature for fastest response.

**Textbook(s) and/or readings:** There is no required textbook for the course. Online readings will be provided on Canvas (see tentative reading list at bottom of syllabus).

**Prerequisites:** BSC 2011 or equivalent; courses in animal physiology and ecology are recommended.

## Learning Outcomes

At the end of this course, each student will be able to:

- Explain the advantages and disadvantages of MPAs as a fisheries and conservation management tool
- Analyze the factors contributing to the success or failure of the creation and monitoring of a proposed MPA
- Summarize the vested interest of various stakeholders and user groups relative to the creation of an MPA
- Plan for potential future challenges and adaptive management needs for a specific MPA

# Course Logistics

This course is entirely web-based and asynchronous. Students may access lectures, readings, and supporting materials as they become available each week.

## *Technology Requirements:*

- A computer or mobile device with high-speed internet connection.
- A headset and/or microphone and speakers; a web cam is suggested.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. [What browser am I using?](#)
- [VoiceThread: <http://ufl.voicethread.com> (more instructions will be provided)]

## Assignments & Deliverables

### Undergraduate Students:

*All students will introduce themselves via a voice thread. 100 points*

### **Discussions. 1400 points**

- There are 14 discussions. Please remember that unless you post to the Discussion board, the instructor cannot know that you are completing and understanding the course material. Each week a general question will be posted to get a discussion going, but comments and or answers need not be limited to that general topic. Please feel free to post your own discussion topics based on the unit focus and readings each week. These discussions can, and should, be just like a good in-class discussion. They are a way for you to test out your ideas related to the material, and enhance your knowledge from the perspectives and experiences of your colleagues in the course.
- Your post can be audio, video or written. I hope to use all three types of media and encourage you to do the same.
- Until you post you will not have access to other posts in the discussion.
- Each discussion will begin on at 12:01 AM Monday morning and your first response is due by Wednesday of each of the 14 weeks.

### *Species Profile paper (2) - 300 points each - 600 points*

- Three-page minimum species profile including description, biology, distribution, life cycle, threats and economic importance or potential. Is it an MPA managed species, why or why shouldn't it be?

### *Critique (4) Peer-Reviewed Articles - 100 points each – 400 pts*

- Choose a peer reviewed journal article, related to Marine Protected Areas. This assignment is to critically review an article. Your critique should include discussing the author's findings, reviewing their materials and methods and analyzing their experimental design. You should determine any shortcomings of their experiment as well as the overall contributions their findings make to understand MPAs.

## Short Paper 600 points

A short overview paper comparing and contrasting the different fisheries management approaches especially how they differ from MPA management and advantages and disadvantages of each. The paper should be about six to nine double-spaced pages.

### *Final Project – 1600 points total*

**Outline for Final Power Point Presentation. 400 points** - Students will submit a 1–2 page (double-spaced) outline of their final presentation. Your outline must be approved prior to your final power point presentation.

- *PLEASE REMEMBER BOTH OUR TA AND I ARE AVAILABLE FOR A SKYPE DISCUSSION RELATIVE TO THIS ASSIGNMENT.*
- I encourage you to take advantage of this opportunity.

### *1200 points Final Power Point Presentation*

- Each student will give a short Power Point Presentation to the class (less than 15 minutes) submitted in Voicethread. This presentation will be the creation of a Marine Protected Area. This creation could be real or imagined.
- The goal(s) of the MPA.
- The hypothesis and science of why the MPA will (should) be successful.
- The presentation should illustrate the size, shape, and habitats of the proposed MPA.
- It should include the rationale for what is NOT allowed in the MPA.
- It should itemize possible stakeholders and their vested interest in the proposed MPA.

**If you anticipate problems with submitting your timely submissions, contact me in advance. Late work will be penalized**

**Total points 4700**

## Grades & Grading Scale

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Policies and Requirements

This syllabus represents current plans and objectives for this course. As the semester progresses, changes may need to be made to accommodate timing, logistics, or to

### **Grading Scale (%)**

A 93-100  
A- 90-92.99  
B+ 88-89.99  
B 83-87.99  
B- 80-82.99  
C+ 77-79.99  
C 73-76.99  
C- 70-72.99  
D+ 67-69.99  
D 63-66.99  
D- 60-62.99  
E > 60

enhance learning. Such changes, communicated clearly, are not unusual and should be expected.

## Attendance, Late Policy & Make-up Requests

It is the responsibility of the student to access on-line lectures, readings, discussions, etc. and to maintain satisfactory progress in the course.

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues **MUST** be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You **MUST** e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

*For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).*

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

**At approximately the mid-point of the semester**, the School of Forest, Fisheries, & Geomatics Sciences will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

**At the end of the semester**, students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## Netiquette: Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Failure to do so may result in loss of participation points and/or referral to the Dean of Students' Office. <http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

## Academic Honesty Policy

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following 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."*

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct or appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

## University Policy on Accommodating Students with Disabilities:

Students requesting accommodation for disabilities must first register with the Dean of Students Office <https://disability.ufl.edu/>. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams.

Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

## 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.

## Getting Help

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu) | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

## Student Life, Wellness, and Counseling Help

- *U Matter, We Care*: If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

- *University Police Department*: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center*: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.
- Academic Resources
- *E-learning technical support*: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- *Career Connections Center*: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- *Library Support*: Various ways to receive assistance with respect to using the libraries or finding resources.
- *Teaching Center*: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- *Writing Studio*: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

#### **Student Complaints:**

Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>.

Online Course: <https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint>

The School of Forest Resources & Conservation cares about your experience and we will make every effort to address course concerns. We request that all online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFRC Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course.