

MAR 385
Principles of Fish Biology and Management
Monday/Wednesday 2:20-3:40 p.m.
Endeavor Hall 168
3 Credits

INSTRUCTORS:

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Mondays and Wednesdays: 3:40-4:40
or by appointment

COURSE OBJECTIVES:

By the end of this course, you should have

- (1) A basic understanding of fish biology and ecology
- (2) An introduction to the fisheries of the world, their regulatory bodies, and the methods used to manage them
- (3) An appreciation of the difficulties in managing these resources

CLASS SCHEDULE

Session	Topic	Readings
I. Fish Biology and Ecology		
1	Introduction	
2	Fish phylogeny and evolution	
3	Abiotic Environment of Fishes, Basics in Fish Biology	
4	Basics in Fish Biology, Fish Migration	
5	Early Life History and Recruitment, Ecological structures	Chapt 3 (Ross)
6	Fishing techniques	Chapt 5 (Ross)
II. Principles of Fisheries Management		
7	Introduction to Fisheries (CPUE, MSY,...)	
8	World, Regional and NY Fisheries	
9	Fisheries Politics, Types of regulations and Management	Chapt 6/7 (Ross)
10	Exam 1	
11	Fisheries ecology: Introduction and background	
12	Fisheries ecology-continued	

- 13 Resource Management in NY: lobsters and striped bass (McKown)
- 14 Resource Management in NY: clams (Davidson)
- 15 Trophic dynamics and food chains Chapt 2 (Jennings)
- 16 Recruitment
- 17 A. The unit stock concept and B. Migration Chapts 3, 9 (Jennings)
- 18 A. Mortality and B. Evolutionary effects of mortality Chapt 9 (Jennings)
- 19 Quantitative models-Exponential, Yield per recruit, Spawning stock biomass,
production models and biological indicators Chapt 7 (Jennings)
- 20 Exam 2
- 21 Stock Enhancement and Aquaculture

III. Issues in Fisheries Management

- 22 Quantitative models continued
- 23 Growth Chapt 9 (Jennings)
- 24 Life history and recruitment
- 25 Class project
- 26 Class project
- 27 Case Study: Students presentation
- 28 Case Study: Students presentation
- 29 Final Exam

READINGS

The textbook for this course is "Fisheries Conservation and Management" by M.R. Ross. **The readings are not required**, but might be helpful in clarifying some aspects of the subject matter presented in the course. You will not be responsible for any information present in the book but not presented during lectures.

EXAMS

There will be three exams, each worth 40 points. The exams are not cumulative. All exams will be a mixture of multiple choices, short answers, and long essays.

LAB CLASS AND ASSIGNMENTS

One field trip followed with one lab class are scheduled (date to be set later) to learn how fisheries data are collected and treated (analysis of scales, measuring the reproduction potential of fish, etc.). There will be an assignment following this class. Details about the lab class and assignment will be provided later in the course. The second assignment is entitled "Know your fish"; each student will be assigned one fish. Your job is to learn everything there is to know about these fish. You should know the following about your fish:

- Habitat, life history, morphology and growth
- Fisheries or other human-made impact on the fish
- The present status of the population
- The conflicts that make it difficult to improve the population status
- Any management successes
- The recommended management actions of interested parties
- Which of those actions seem most reasonable, and why?

A short report regarding the above information is required in late April, and oral presentations are scheduled in early May.

GRADING

The point distribution and the grade cutoffs are shown below. The grade cutoffs represent the highest possible cutoffs.

Point Distribution:

Exams: 120 Points

Assignments (including the field trip): 60 Points

Oral presentation: 20 Points

Grade Cut-Offs:

Grade	Lowest Cutoff
A	186
A-	180
B+	174
B	166
B-	160
C+	154
C	146
C-	140