

# Course Syllabus

[Jump to Today](#)

 [Edit](#)

## Quantitative Modelling in Ecosystem Based Management FISH 562/563 Spring 2018

### Instructor:

Ray Hilborn

[rayh@uw.edu \(mailto:rayh@uw.edu\)](mailto:rayh@uw.edu)

Office: 352b Fishery Sciences

Tel. 543-3587

Office Hours: .

Kerim Aydin

[kerim.aydin@noaa.gov](mailto:kerim.aydin@noaa.gov)

[\(mailto:kerim.aydin@noaa.gov\)](mailto:kerim.aydin@noaa.gov)

Lecture Session M 12:30-2:20

Lab Session Tu 3:00-4:50

### 1. Introduction

It is increasingly recognized that single species management is insufficient to achieve societal goals for marine ecosystems, and that numerous aspects of ecosystems must be considered in decision making. The general field has become known as Ecosystem Based Management, or the Ecosystem Approach to Fisheries, or Ecosystem Based Fisheries Management and there is a large and expanding literature on the theory and practice associated with these topics.

In this course we will read much of the primary literature on ecosystem based management, and explore the major aspects of ecosystem based management including (1) interactions between species and their environment, (2) methods of by-catch reduction and avoidance, (3) the behavior of fishing fleets and how they respond to regulations and incentives, (4) marine spatial planning and marine protected areas as a tool in EBM and (5) the dynamic interaction between marine ecosystems, fishing fleets and management agencies. During the lecture portion we will provide a specific focus on the issues and literature

surrounding marine protected areas and impacts of fishing forage fish.

The course will be offered as a 2 credit lecture/discussion course(FISH 562) with an additional option 2 credit laboratory (FISH 563) in which quantitative tools in ecosystem based management will be explored.

FISH 563 (the computer laboratory) will be directed by Dr. Kerim Aydin from the Alaska Fisheries Science Center. The laboratory sections will use state-of-the-art models to

- Become familiar with multispecies and ecosystem modeling techniques for modeling ecosystem trade-offs.
- Set up and evaluate results of trade-off scenarios.
- Hands-on work with goals and metrics; e.g. determining and evaluating multispecies reference points.
- Examine methods for coping with uncertainty in ecosystem models (e.g. uncertainty in functional responses, environmental forcing, etc.)

The lecture session will meet once a week for 2 hours, and the laboratory section will meet for one 2 hour session.

## 2. Course Objectives:

### By the end of the course you will

1. Be familiar with the primary literature on EBM
2. Understand the different perspectives on the essential elements of EBM
3. Understand how and where EBM is being applied and where it is not
4. Those taking the laboratory section will have experience in the potential and limitations of the models proposed for use in EBM and know several of these models well.

## 3. Course Policies

To request academic accommodations due to disability, please contact Disabled Student Services indicating your needs and inform me as soon as possible about special accommodations. Disabled Student Services, 448 Schmitz, Box 355839, 206-543-8925 (Voice/TTY), [uwdss@u.washington.edu](mailto:uwdss@u.washington.edu) (<mailto:uwdss@u.washington.edu>)

Plagiarism, cheating, and other misconduct are serious violations of your contract as a student. You are expected to know and follow the University's policies regarding academic integrity.

## 4. Prerequisites

No prerequisites for students in the lecture section. Students in the laboratory section should be familiar with R programming, and ideally having taken fish 454 and 458.



## 5. Course Requirements and Grading

In the lecture section each student's primary responsibility will be participation in the class sessions, discussion, and of a case study in implementation of ecosystem based management in a specific location. In the laboratory sections there will be four homework assignments.

### 6. Methods of Instruction

**Lectures:** The class meets for 2-hour periods each week 12:30-2:20 M, and the lab section will meet for 1 2-hour session 3:00-5:00 on Tuesdays.

## Course Summary:

Date	Details
Tue Apr 3, 2018	 <a href="https://canvas.uw.edu/courses/1199985/assignments/4183133">Homework 1 Basic Ecopath (https://canvas.uw.edu/courses/1199985/assignments/4183133)</a> <span style="float: right;">due by 11:59pm</span>
	 <a href="https://canvas.uw.edu/courses/1199985/assignments/4222985">Paper Reviews (https://canvas.uw.edu/courses/1199985/assignments/4222985)</a>



