

Fall 2015

## **BIOS 4590**

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SYLLABUS FOR  
**EES 4949 – Natural Resource Management**  
 (cross-listed as BIOS 4590 Special Topics)  
 FALL SEMESTER 2014

**Instructor:** Dr. Martin O'Connell  
 GP 1008  
 280-4032  
 moconnel@uno.edu

**Office Hours:** Tu-Th 8:30-9:30, 10:45-11:45  
 W 9:00-11:00  
**Lecture:** Tu-Th 9:30 – 10:45  
**Room:** GP 1009  
**Credit:** 3 hours (**only option!**)

**Required Text:** Meffe, G. K. with L. A. Nielsen, R. L. Knight, and D. A. Schenborn. 2002. Ecosystems Management: Adaptive, Community-Based Conservation. Island Press, Washington, D.C.

Date	Lecture Topics and Text Pages to be Read for Class
Aug 21 Thu	Introduction; explanation of syllabus and grading format; outline and rationale of course; explanation of text; how we will use it
Aug 26 Tue	Fisheries as examples of managed resources; importance of fishes to multiple disciplines (e.g., ecology, geology, biology, etc.)
Aug 28 Thu	Open discussion and introductions; the cheese ball things that happen at management meetings; discuss writing POSITION LETTER
Sep 2 Tue	Traditional management policies; maximum sustainable yields (MSY); recruitment, mortality, W.E. Ricker and the "Big Green Monster"
Sep 4 Thu	<u>READ:</u> Introduction, pages 1-7 and Landscape Scenarios (ROLE, SnowPACT, PDQ); pages 11-55; prepare for activity #1 (e.g., teams chosen)
Sep 9 Tue	<u>READ:</u> Ecosystem Management pages 57-66
Sep 11 Thu	<u>Discussion and team activity #1:</u> Which ecosystem organization (ROLE, SnowPACT, PDQ) should get federal funding?
Sep 16 Tue	Why global fisheries are crashing; traditional "one species" approaches; ecological versus traditional interpretations of population dynamics; Chinese fisheries; the Allee effect; Peruvian anchovies; <b>**POSITION LETTER topic due**</b>
Sep 18 Thu	<u>READ:</u> Ecosystem Management pages 66-76; prepare for activity #2
Sep 23 Tue	<b>** EXAM #1**</b>
Sep 25 Thu	<u>READ:</u> Uncertainty and Complexity; pages 79-87; Ecosystem Management in policy and practice; pages 89-93 and Adaptive Management; pages 95-110
Sep 30 Tue	<u>Discussion and team activity #2:</u> Wind turbines for Round Lake?
Oct 2 Thu	Effects of over-fishing; extinction and extirpation; changes in population sizes; effects of over-fishing continued; changes in maximum fish sizes; fecundity
Oct 7 Tue	Long-term impacts and "lag effects"; juvenile mortality; indeterminate fish growth; slot and size limits

Oct 9 Thu      READ: Genetic Diversity; pages 115-129

Oct 14 Tue     Discussion: Are conservation geneticists just busy counting the deck chairs while the ship is sinking? Prepare for activity #3

Oct 16 Thu     **\*\*FALL BREAK – NO CLASSES\*\***

Oct 21 Tue     Pollution, heavy metals, and sewage; Mercury in the Lake Pontchartrain Basin

Oct 23 Thu     Discussion and team activity #3: Should the Semak bison range be extended into KARMA?

Oct 28 Tue     Interviews with graduate students – Part One

Oct 30 Thu     **\*\*EXAM #2\*\***

Nov 4 Tue      Interviews with graduate students – Part Two

Nov 6 Thu      Threatened and endangered species; example of Gulf sturgeon; prepare for activity #4

Nov 11 Tue     Management of African wildlife.

Nov 13 Thu     Discussion and team activity #4: Drilling for oil in the PDQ Estuary?

Nov 18 Tue     Invasive species and negative impacts

Nov 20 Thu     Aquaculture: a silver bullet or another problem?

Nov 25 Tue     Freshwater mussels; the Mississippi River's freshwater mussel fishery

Nov 27 Thu     **\*\*THANKSGIVING – NO CLASSES\*\***

Dec 2 Tue      Activity #5 (Day 1): oral presentations of position letters

Dec 4 Thu      Activity #5 (Day 2): oral presentations of position letters; **\*\* STUDENT POSITION LETTER DUE\*\***

Dec 11 Thu     **FINAL EXAM: 10:00 – 12:00**

## COURSE GUIDELINES

1. Grades for this course will be based on three exams (two during the semester and a larger final exam), a student position letter, and participation in five classroom activities.
2. This course is intended for students who are interested in learning about the management of natural resources. It will be very difficult to learn the material without attending class. In order to encourage attendance, I will follow the attendance policy listed below:
  - a. If you have four unexcused absences over the semester your final grade will be dropped one letter grade from what it would have been without the absences. If you have eight unexcused absences, your grade will be dropped two letter grades, etc.
  - b. Absences will be excused only for dates on which you have a valid, dated, medical excuse signed by a health professional or if there has been a death in your family.
3. Grading will be based on a scale of: 90 – 100% = A ; 80 – 89% = B ; 70 – 79% = C ; 60 – 69% = D ; less than 60% = F.

## POINT STRUCTURE

### UNDERGRADUATES

EXAM #1	100
EXAM #2	100
FINAL EXAM	150
Student position letter	50
Activity participation	<u>50</u>
<b>Total =</b>	<b>450</b>

Prerequisites: EES 1000, 1001, 1002, 1003; BIOS 1073, 1071; MATH 1126, 2107

Student Learning Outcomes: This interdisciplinary course will instruct junior and senior level undergraduate students in the importance of understanding the effectiveness of using ecological policies for addressing global problems with natural resource management. With an emphasis on Louisiana's own ecosystems, students will survey numerous examples of how ecologically-based methods have repeatedly been used to restore and improve both aquatic and terrestrial natural resources for commercial and recreational use. Louisiana's natural resources are an important part of the State's economy and culture, yet they are under increased pressures that threaten their existence (e.g., coastal erosion, urban development, the hypoxic "Dead Zone", etc.). The proposed course is justified in that it offers students insight to ecological policies that have proved successful in managing other resources around the world. Those future biologists, ecologists, engineers, and geologists who will be managing natural areas need to better understand the underlying ecological processes that help produce natural resources and that can be affected by their actions. This course will instruct students about current resource problems, the successes and failures of traditional management policies, the benefits of ecological approaches to restoring natural resources, and how they can apply these approaches in their respective fields.

Statement on Student Conduct: All students are expected to conduct themselves in a mature and disciplined manner that does not disrupt nor distract from the educational pursuits of others. Should the professor determine that a student's conduct is being distracting or disruptive, the professor may impose the student's immediate removal from the classroom until the student can conduct himself or herself in an appropriate manner. If the professor is unable to obtain the cooperation of the student, the student may be referred for disciplinary action.

Academic Integrity: Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at <http://www.studentaffairs.uno.edu>.

Accommodations for Students with Disabilities: It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to <http://www.ods.uno.edu>.