MARINE MAMMALS
GULF COAST RESEARCH LABORATORY – SUMMER 2015

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“If there is magic on this planet, it is contained in the water.”
-- Loren Eiseley (Anthropologist)

This course, Marine Mammals, is a part of the summer field program at the Gulf Coast Research Laboratory and offered through the Department of Coastal Studies, University of Southern Mississippi.

COURSE DESCRIPTION: The course, Marine Mammals, will cover biology (classification, evolutionary history, anatomy, physiology, and behavior), conservation and management of the different marine mammal groups [cetaceans, pinnipeds, sirenians, sea otter & marine otter, and the polar bear]. It will include an in-depth survey of specialized features found in marine mammals (sensory systems, integument system, thermoregulation, diving physiology, foraging strategies, etc.) that allows them to survive and reproduce in extreme ecosystems – the marine environment. The class will also investigate issues marine mammals experience with respect to conservation, management, exploitation, and human interactions. Course is five semester credit hours. Prerequisites: Three semesters of biology courses.

COURSE OBJECTIVES: The objectives of this course are: (i) Provide students with a background in the unique biological aspects found in marine mammals, including the similarity with terrestrial mammals. (ii) Compare the different ecosystems marine mammals are found and how they adapt to survive and specialize in these ecosystems. (iii) Review field/lab/conservation skills used in marine mammals research. (iv) Work on conservation and management projects pertaining to marine mammals. (v) Develop skills beneficial to marine mammal research. (vi) Gain experience in tools used in marine mammal research, including ID work. These goals will be accomplished through lectures, discussions, review of important literature, group projects, presentations, field-based & lab-focused opportunities, and boat survey expeditions.

COURSE DETAILS: This course meets second term, June 25, 2015 to July 24, 2015 Monday through Friday from 10.00-12.00 and 13.00-16.00 at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi. Class days will have components lecture, discussion of peer-reviewed and gray literature pertinent to marine mammals and their environments, project development, lab and field-based exercises. These will vary in time and day so it is important that all students participate in all days of classes. It is also important that students complete all readings before they are discussed.

Required Textbooks:
1. Marine Mammals Evolutionary Biology, 3rd ed. 2015
   [The 3rd edition is scheduled to be released Apr 1 2015 however, the 2nd edition is also acceptable] by Berta, Sumich & Kovacs / Academic Press/Elsevier ISBN: 9780123970022


Recommended Textbooks:
Whales and Seals: Biology and Ecology 2007 (Highly recommended) by Pierre-Henry Fontaine / Schiffer Publishing [This book should be less than $30 new]

Guide to Marine Mammals & Turtles in the US Atlantic & Gulf of Mexico
By Wynne & Schwartz
Rhode Island Sea Grant
[This book should be less than $25 new and less than $11 used]

Needed book (if you don’t want to purchase, copies will be available to share in the lab):
Conservation and Management of Marine Mammals 1999 by Twiss & Reeves, Smithsonian Institution Press [This book is not in print - can order on Amazon or abebooks.com for less than $10]
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COURSEWORK:
1. EXCURSIONS - Boat work → Behavioral Observations & ID
   A. 2-day boat trip for offshore experience in the Gulf of Mexico
   B. Day long excursions: to investigate marine mammal use of inshore/coastal waters
   C. Half day excursions in small groups: to investigate marine mammal presence/use of local waters near the shoreline

2. CASE STUDY
   A. PRESENTATIONS – We will be using the Twiss and Reeves textbook to give students a historical starting point on a marine mammal management issue that is still ongoing and problematic. Using this material to understand the management issue, students will work as a team to i) research the current aspects of their management issue and ii) suggest solutions to deal with the problem(s).
      --This will give students the experience of researching the different aspects of an actual management problem.
      --Develop as a team a presentation on historical and contemporary aspects of the marine mammal issue and their recommendations
      --Each person develops a one page-briefing memo on his/her recommendations in the style of a submittal to a government agency. This provides each student the opportunity to develop strategies that may not have been agreed upon by the team.
      --Briefing memo will be critiqued by the class.

   B. CASE STUDY PRESENTATION PARTICIPATION - On the days not presenting, students are required to participated in the form of questions and discussion as if the issue is presented to a panel and they are members of the panel.

3. ACTION PLAN FOR A MARINE MAMMAL SPECIES – NOAA develops Action Plans for species threatened or of special concern. In this format, students will develop an action plan/management plan for a marine mammal species of concern.

4. CURRENT CONSERVATION ISSUE – As a team, students will explore a current conservation issue that is threatening marine mammals, evaluate current efforts, and strategize their recommendations. You will learn how to write a government briefing memo on the issue.

5. HOW TO EDUCATE THE PUBLIC ON MARINE MAMMAL ISSUES – We will explore different techniques and strategies to educate/inform the public on issues of concern and also how to explain science to different types of audiences, including those in K-12.

6. RESEARCH TECHNIQUE USED IN MARINE MAMMAL RESEARCH
   A. Students will explore different research techniques that are currently, historically, or could be used in marine mammal research.
   B. Students will select a technique that interests them, is an option for marine mammal research, or they do not think should be used. Each will develop a two-page summary and a presentation to explain the technique and its application in marine mammal research.

7. LABORATORY & FIELD EXERCISES
   A. Photo ID work
   B. Field trips
   C. US and international laws can provide protection to marine mammals but can also be controversial. We will explore the different perspectives and use of these laws.
   D. We will review and critique marine mammal literature to gain an understanding of its relevance to the field of marine mammalogy and to conservation.
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8. EXAMS & QUIZZES - There will be two essay exams, which must be taken the day of the exam. Exam questions will draw from lecture material (so don’t miss class and take really good notes), readings from textbooks, assigned articles, and chapters assigned from other material. Use textbook 2 to supplement your understanding of the material and the individual species. You will need to provide examples of species that fit your answer, in other words you cannot give “whale” or “seal” as an example. Each exam will not be cumulative but the material builds on itself so you will need to understand earlier material to answer questions further into the course. Quizzes will occur between exams with the goal of testing small sections of complex topics to allow students to determine what they need to cover more extensively prior to the exams.

We are dealing with a very dynamic topic so opportunities may arise that causes changes to occur in our syllabus. Therefore, any of this material is subject to change.

From all total points in this course, the course grade for each student will be calculated as follows:

A    90% and above
B    80 – 89%
C    70 – 79%
D    60 – 69%
F    59% and below

IMPORTANT INFORMATION:
Electronics: Cell phones must be switched off or on mute.
*Do not use cell phones and other electronic devices (except laptop for note taking) during class.
*No texting during class. Do not check messages or email on your phone during class.
*If you take notes with your laptop, do not use the Internet or check email during class!! This practice will result in loss of 20 pts off total score for each event.
*If you come in late or leave early please sit in the back so not to disturb other students.
*Cell phones and laptops must be turned off and put away during exams.
*Absolutely no use of phones or laptops during student presentations or loss of 25 pts will occur / All laptops must be closed during student presentations.

ACADEMIC INTEGRITY: I take this very seriously. Cheating, plagiarism (passing the work of others off as you own), or “helping” another student will not be tolerated. If I have good reason to suspect a student is cheating or plagiarizing, the student will immediately receive a failing score for the exercise and referred for further action. Usually the effort spent trying to cheat/plagiarize and not get caught exceeds the effort you would spend if you just studied and worked on your own, so please give yourself some respect by being honest. It is appropriate to work together on reviewing assigned papers and on your presentations. You may discuss ideas, themes, interpretations, etc in preparation for the topic. However, each student must submit independently written work and all work must be in your own words.

Academic Honesty: My view on cheating:
1. Don’t
2. See #1
USM’s policy: “When cheating is discovered, the faculty member may give the student an F on the course or in the course [I have so don’t cheat]. If further disciplinary action is deemed appropriate, the student should be reported to the Dean of Students [I have so don’t cheat]. In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by the University of Southern Mississippi.” Undergraduate Bulletin.

**Note: Plagiarism is a form of cheating and will be handled as outlined above. Make sure all work is in your words [i.e., changing a word or two or three in a sentence is not putting it your words]. Plagiarism is committed in a number of ways:
1. Reproducing another author's writing as if it were one's own.
2. Paraphrasing another author's work without citing the original.
3. Borrowing from another author's ideas, even though those ideas are reworded, without giving credit.
4. Copying another author's organization without giving credit.
5. Not putting the sentences(s) in your own words even though you cite the author(s) – in other words, changing a couple/few words in the sentence is still plagiarism even though you cited your source.

Plagiarism is a serious offense. Full tenured-professors have lost their academic positions for plagiarizing. It is just as serious if you do it as it reflects on you so don’t do it!

**Disability Accommodation:** If you have a disability that qualifies under the American with Disabilities Act (ADA) and require accommodations, contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. You can contact ODA if you are not certain whether a medical condition/disability qualifies. Mailing address: 118 College Dr. #8586, Hattiesburg, MS 39406-0001. Phone: (601) 266-5024, Fax: (601) 266-6035. Individuals with hearing impairment can contact ODA using the Mississippi Relay Service at: 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.

**Don’t Panic:** You are not expected to know the material prior to the readings nor are you expected to understand all the material. That is the point to this class – to learn about different factors affecting organisms and ecosystems. Look at the class as a fact-finding mission. If at any time you don’t understand something or struggling PLEASE talk to me!

**HAVE FUN WITH THE COURSE!**

Barbara McClintock said, "Good science cannot proceed without a deep emotional investment on the part of a scientist."

**So take an active role, as you are about to enter the coolest science out there . . . marine mammal science!**