

**Sirenian Biology** COA 445/545  
Gulf Coast Research Laboratory, Ocean Springs, MS  
January 3-13, 2017  
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**Course Description:** In this course we will explore the biology of Sirenians (manatees and dugongs) through lecture, discussion, group research projects, and a trip to Florida to observe Florida manatees in the wild. Sample topics include anatomy, physiology, behavior, evolution of Sirenians, and sensory capabilities. An emphasis will be placed on conservation issues and we will explore select case studies in depth. Additionally, this course will delve into scientific primary literature and cover basic data analysis techniques. Prerequisites: Two semesters of biology or permission of instructor. Three credit hours.

**Lecture Topics:** Lecture topics will include life history, evolution, anatomy, physiology, behavior (e.g. social, reproductive, and foraging), acoustics, energetics, locomotion, sensory capabilities, patterns of movement, habitat use, and conservation of Sirenians. Additionally, the scientific method, experimental design, research technology, and basic data analysis techniques will be presented.

**Primary Literature:** In the first week, students will choose primary research articles for the class to read and then lead discussion of the material in the second week of class.

**Group Projects:** Undergraduate students will form groups and design a mini-research project to be conducted during the course using one of the provided datasets (e.g. manatee acoustic recordings, behavioral videos, tag sensor data). The first stage will require drafting a proposal and finding suitable primary literature articles related to their proposed research. The proposal will include an outline of the intended data analysis and will require approval from the professor. After conducting the proposed research, students will organize their results into publication-quality tables/figures and include them in their final report. The project will culminate in a final report and include the following sections: introduction (including a literature review), methods, results, discussion, and works cited. Additionally, students will present their results to the class on the last day of the course. *Graduate students will work independently on their own research project and be responsible for their own proposal, research, report, and presentation.*

**Class Trip:** The class will travel to a couple locations in Florida to view manatees in the wild and document their behavior. Possible activities include observing a manatee necropsy at the Marine Mammal Pathobiology Lab and snorkeling with manatees in Crystal River.

**Readings:** No text book is required for this course. All reading material will either be provided or found by students in scientific journals.

**Quizzes:** Short in-class quizzes will be announced a day in advance along with the general topic to be covered.

**Final Exam:** At the end of the course a final exam will be given that covers all course material. The format will include multiple choice questions, short answer questions, and at least one essay.

**Class Hours:** 9:00 am – 4:00 pm Monday –Friday. A 1-hour break for lunch will be included around noon. The morning and afternoon sessions will have 1-2 short breaks (~10 minutes). Class time will be split between the class room, computer lab, and library. The final exam and research project presentations will occur on the last day of the course (January 13<sup>th</sup>), you are expected to stay until 12:30 (be sure to consider this when making travel arrangements).

**Grading:** No extra credit will be available.

Participation	10%
Discussion article selection	5%
Leading discussion	15%
Quizzes	10%
Research project:	
• Proposal	10%
• Paper	15%
• Presentation	10%
<u>Final Exam</u>	<u>25%</u>
Total	100%

**Final Course Grade:**

89.5%-100%	A
79.5%-89.4%	B
69.5%-79.4%	C
59.5%-69.4%	D
<59.5%	F

**Graduate Students:** Graduate students will be required to write a 4,000-word research paper in addition to the other course requirements described above. Paper topic approval will be required on the first day and the paper will be due on the last day of class. The paper will integrate scientific literature into a cohesive description of current knowledge of the selected topic and propose future research avenues.

**Attendance:** Students are required to attend all lectures, activities, trips, discussions, and the final exam.

**Conduct:** Cell phones must be silenced and out of sight during all class/trip meetings.

**Academic Dishonesty:** All work must be your own. A collaborative effort in groups when designated by the professor is encouraged, but the final product, task, or assignment must be that of the individual student, unless otherwise specified by the professor. It is a violation of academic honesty to turn in work that is not your own, plagiarize, or to cheat on an exam. Acts of academic dishonesty will result in a final grade of "F" and be reported to your university in addition to the University of Southern Mississippi.

**ADA:** If a student has a disability that qualifies under the Americans with Disabilities Act (ADA) and requires accommodations, he/she should 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. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address:

The University of Southern Mississippi  
Office for Disability Accommodations  
118 College Drive # 8586  
Hattiesburg, MS 39406-0001

Voice Telephone: 601.266.5024 or 228.214.3232 Fax: 601.266.6035

Individuals with hearing impairments can contact ODA using the *Mississippi Relay Service* at 1.800.582.2233 (TTY) or email ODA at [oda@usm.edu](mailto:oda@usm.edu).