Barrier Island Ecology 2018  
Summer Field Program  
University of Southern Mississippi Gulf Coast Research Laboratory  
May 14, 2017-June 1, 2018

**Instructor:** Christy Philippoff  
228-990-9614 (cell phone)

**Course Description:** The northern Gulf of Mexico has a unique set of barrier islands, from Alabama to Louisiana, that are approximately 8-10 miles offshore. To the north of this chain of barrier islands is the Mississippi Sound, with its shallow brackish waters. To the south of this chain of barrier islands is the deep marine seawater of the Gulf of Mexico. This geological wonder allows for the formation of a unique ecosystem on these barrier islands. Topics covered in this class include geology, ecology, botany, and zoology, and with a variety field research excursions highlighting methods and techniques for sampling in these unique ecosystems.

**Learning Goals:** Students will gain an understanding of the geology, ecology, botany, and zoology of barrier islands along the northern Gulf Coast, found within Alabama, Mississippi, and Louisiana waters. Students will also become familiar with sampling techniques and observation skills while exploring these islands.

**Grading:**  
Undergraduate students  
Graduate students  

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<td>Group Participation 50 pts</td>
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Letter grades are based upon a straight percentage breakdown:  
A = 100-90%, B = 89-80%, C = 79-70%, D = 69-60%, F = 59% or lower
Tentative Schedule:

Week 1
Monday-May 14
Introduction
Canvas: Barrier island geology, morphology, and evolution.
  • How do barrier islands form
  • How are barrier islands changing
  • Geological processes of island dynamics
  • Geology and sedimentation
  • Benefits of barrier islands to mainland
    o Online quiz

Tuesday-May 15
Canvas: Barrier island anatomy.
  • Types of dunes
  • Maritime forests
  • High and low energy beaches
  • Pond and lagoon communities
  • Submerged seagrass communities
  • Near shore, intertidal, shallow sub-tidal, and supra-tidal communities.
  • Salt marsh communities
    o Online quiz

Wednesday-May 16
Canvas: Barrier island plants and animals.
  • Locations of organisms
  • Animal adaptations
  • Vegetation
  • Aquatic and terrestrial invertebrates
  • Mammals
  • Birds
  • Reptiles
  • Fish
    o Online quiz

Thursday-May 17
Canvas: Anthropogenic effects.
  • History
  • Current events
  • Restoration
    o Online quiz
    o Research paper due for graduate students

Friday-May 18
Canvas: Midterm
Week 2
Monday - May 21
- 8:00 - Orientation – Caylor auditorium
- 9:30 - Visit Gunter library - Hurricane Balls exhibit
- 10:00 - Scope of Course - Introduction and definitions
- 11:00 - Lunch
- 12:00 - Review of barrier island geomorphology
- 2:00 – **Field Trip to Gulf Islands National Seashore**
  - History and Management

Tuesday - May 22
- 8:00 - **Field trip to Dauphin Island, AL**
  - Island geology and evolution

Wednesday - May 23
- 8:00 – Review of water quality
- 10:00 – **Field trip to Pascagoula Watershed**
  - Comparison of water quality down the Pascagoula River to the MS Sound
- 4:00 – Review of barrier island anatomy

Thursday – May 24
- 8:00 - Field Trip to Ship Island
  - Dune communities
  - Pond communities
  - Marsh communities
  - High energy and low energy beaches

Friday – May 25
- 9:00 - **Field Trip to Cat Island**
  - Sampling
  - Species identification
  - Adaptation

Week 3
Monday – May 28
- 8:00 – **Field Trip to Horn Island**
  - Species identification
  - Adaptations

Tuesday – May 29
- **Field Trip to Chandeleur Island**
  - Seagrass communities
  - Nearshore
  - Intertidal benthic communities
  - Sedimentation

Wednesday – May 30
- Review anthropogenic effects
- 9:00 - **Field Trip to Deer Island**
Geomorphology
- Restoration efforts

**Thursday – May 31**
- 8:00 - Field Trip to Grand Bay NERR
- 11:00 - Comparison of barrier islands
- 2:00 – Student presentations; Review for final exam

**Friday – June 1**
- 9:00 - Field Journals Due and Final Exam

**Field Trip Essentials:**
Please be prepared for every field trip. Here is a list of items that are necessary for field trips: closed-toed shoes, hat, sunscreen, bug spray, water, snacks, etc.

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 emailing ODA at oda@usm.edu.

**Academic Integrity**
All students at the University of Southern Mississippi are expected to demonstrate the highest levels of academic integrity in all that they do. Forms of academic dishonesty include (but are not limited to):
1. Cheating (including copying from others’ work)
2. Plagiarism (representing another person’s words or ideas as your own; failure to properly cite the source of your information, argument, or concepts)
3. Falsification of documents
4. Disclosure of test or other assignment content to another student
5. Submission of the same paper or other assignment to more than one class without the explicit approval of all faculty members involved
6. Unauthorized academic collaboration with others
7. Conspiracy to engage in academic misconduct.

Engaging in any of these behaviors or supporting others who do so will result in academic penalties and/or other sanctions. If a faculty member determines that a student has violated our Academic Integrity Policy, sanctions ranging from resubmission of work to course failure may occur, including the possibility of receiving a grade of “XF” for the course, which will be on the student’s transcript with the notation “Failure due to academic misconduct.” For more details,
please see the University’s Academic Integrity Policy. Note that repeated acts of academic misconduct will lead to expulsion from the University