The University of Southern Mississippi’s Gulf Coast Research Laboratory (GCRL) in Ocean Springs, Mississippi, was established in 1947. The Summer Field Program is held at GCRL and is designed to allow undergraduate and graduate students an unrivaled academic experience studying coastal environments in an intensive field and laboratory-based setting. On-site amenities include research vessels, dormitory, dining hall, research labs, library and specimen museum. Submit your application today to attend the 2021 Summer Field Program and gain the experience of a lifetime!
ELASMOBRANCH BIOLOGY
(Shark Biology)
This specialized course will provide students with an overview of elasmobranch (sharks, skates and rays) biology, ecology and taxonomy. Lectures will cover such topics as evolution, anatomy and physiology, sensory systems, behavior and ecology. Students will be introduced to the diversity of elasmobranchs and will learn how to identify species. Special emphasis will be given to the species common to the Gulf of Mexico. Laboratory work will consist of several inshore and offshore collecting trips, as well as dissections. Prerequisites: Marine Biology and Marine Ichthyology or permission of instructor. COA 422/522, 422L/522L: Elasmobranch Biology, 6 credit hours (3/3).

MARINE CONSERVATION
This course will introduce students to conservation biology and ecology with a focus on marine and coastal ecosystems. Topics may include biodiversity, marine ecosystem processes and threats, conservation of habitat and species, and human impacts, solutions and policy. The course will consist of lectures, field trips and laboratory exercises designed to provide students with hands-on experience in marine conservation biology. Prerequisites: 2 semesters of biology or permission of instructor. COA 450/550, 450L/550L: Marine Conservation, 5 credit hours (3/2).

MARINE INVERTEBRATE ZOOLOGY
This course is a concentrated study of the marine and estuarine invertebrates from the Mississippi Sound and contiguous continental shelf of the northeastern Gulf of Mexico. Emphasis is on structure, classification, phylogenetic relationships, larval development and functional processes. Prerequisites: 16 hours of biology or permission of instructor. COA 428/528, 428L/528L: Marine Invertebrate Zoology, 6 credit hours (3/3).

MARINE SCIENCE I - OCEANOGRAPHY
This course provides a multidisciplinary foundation in oceanography, specifically the terminology, principles, processes, relationships and phenomena pertaining to three of its traditional sub-disciplines: physical, geological and chemical oceanography. The importance of the interaction of biotic and abiotic processes in the ocean will be addressed through exploration of timely issues in ocean science. Prerequisites: College algebra, 8 hours of chemistry, and 8 hours of biology or permission of instructor. COA 300, 300L: Marine Science I - Oceanography, 5 credit hours (3/2).
Session II  July Term

MARINE ANIMAL BEHAVIOR
This specialized course will provide an in-depth exploration of animal behavior in marine organisms, including the physiological and ecological aspects of behavior. The course will introduce students to techniques for observing animal behavior in the field and laboratory, designing and conducting behavioral experiments, and collecting and analyzing behavioral data. The course will consist of lectures, field trips and laboratory projects designed to provide students with hands-on experience in marine animal behavior. Prerequisites: 2 semesters of biology or permission of instructor. COA 442/542, 442L/542L – Marine Animal Behavior, 5 credit hours (3/2).

MARINE ICHTHYOLOGY
Marine ichthyology is an intensive marine biological field course which engages students to collect and identify marine fishes in numerous habitats in the Gulf of Mexico. Students experience a variety of land-based and vessel-based collection techniques, such as seining, cast netting, hook and line fishing, trawling, trolling, dip netting and many others. Successful students gain an appreciation for taxonomic identities of fishes and the synergism between abiotic and biotic factors that drive marine fish distribution and faunal diversity in the northern Gulf of Mexico. Prerequisites: 16 hours of biology or permission of instructor. COA 421/521, 421L/521L: Marine Ichthyology, 6 credit hours (3/3).

MARINE MAMMALS
This course is an overview of the biology of marine mammals (cetaceans, pinnipeds, sirenians, sea otters and the polar bear), including their classification, evolutionary history, anatomy, physiology, behavior, conservation and management. Pre-requisites: 16 hours of biology or permission of instructor. COA 443/543, 443L/543L: Marine Mammals, 5 credit hours (3/2).

MARINE SCIENCES II - MARINE BIOLOGY
An ecological approach is taken to understand the biology of marine systems with emphasis on local organisms, their habitats, life cycles and survival strategies. Prerequisites: 8 hours of biology or permission of instructor. COA 301, 301L: Marine Sciences II – Marine Biology, 5 credit hours (3/2).

RESEARCH STUDY PROGRAM
Available in both Session I and II, this Research Study Program allows upper-level undergraduate students an opportunity to gain valuable experience in designing a research project, sampling, analyzing data and presenting research findings. Research options encompass a broad spectrum of disciplines in coastal sciences that include marine aquaculture, marine biodiversity, marine biomedicine, marine ecology, marine education, marine fisheries, marine pathology and marine toxicology. This course could easily form the basis of a senior or honors project. Prerequisites: 4 semesters of biology or permission of instructor. COA 492: Special Problems - Research. One to 6 hours of credit are available and assigned by the instructor.

Contact Margaret Firth for further information at 228.818.8852 or margaret.firth@usm.edu.
Course Fees

Due to the intensity of each course, students may enroll in one course per session. All fees are subject to change without notice.

Fees do not include books, supplies, etc. ($75-200, depending on course)

More information on the GCRL Summer Field Program can be found at gcrl.usm.edu/summer_field.

UNDERGRADUATE

Note: (1) A non-refundable application fee of $40 is required to process application materials. If you are applying for multiple sessions, only a single application fee is required. (2) You can only enroll in one course per session, and the chart represents the costs associated with each course. If taking multiple courses, add the total cost for each course.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th># of credit hours</th>
<th>Tuition 366/credit</th>
<th>Capital Improvement Fee ($2.92/hour; $35 max per term)</th>
<th>Field Fee</th>
<th>Lab Fee</th>
<th>Total Cost per Course</th>
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GRADUATE

Note: (1) A non-refundable application fee of $60 is required to process application materials. If you are applying for multiple sessions, only a single application fee is required. (2) You can only enroll in one course per session, and the chart represents the costs associated with each course. If taking multiple courses, add the total cost for each course.

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<th>Field Fee</th>
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ROOM AND BOARD FEES

All fees are subject to change without notice.

Room and board is optional. The fee includes a shared room in a GCRL housing facility and meals in the GCRL dining hall during the course dates. Please indicate your interest in room and board on your application, and the GCRL Housing and Residence Life coordinator will contact you for more details. If you have specific questions about GCRL housing, contact Ben Weldon (benjamin.weldon@usm.edu; 228.818.8824).

2021 GCRL Summer Field Program: Room and Board Fees

<table>
<thead>
<tr>
<th>Term and Session</th>
<th>SUMMER Session I</th>
<th>SUMMER Session II</th>
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</thead>
<tbody>
<tr>
<td>Fee</td>
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</table>

PARKING

All students must have a valid University of Southern Mississippi parking permit. Parking permits can be purchased online through the University of Southern Mississippi Parking and Transit Services website: usm.edu/parking. Summer parking permits cost $25 and are valid for both summer terms. USM students with a valid annual permit do not need to purchase a summer permit for GCRL.
ACADEMIC CREDIT

All courses offered through The University of Southern Mississippi’s Gulf Coast Research Laboratory in the Division of Coastal Sciences are accredited by the Southern Association of Colleges and Schools Commission on Colleges. Upon completion, a transcript request must be submitted to transfer credit hours to the home institution. To order a transcript, contact the USM Registrar’s Office at 601.266.5006.

The Marine Education Center and Gulf Coast Research Laboratory are part of USM’s School of Ocean Science and Engineering.

Depending on the status of the COVID-19 pandemic, it is possible courses may be shifted to a hybrid, or partially web-supplemented, format. The safety of students and staff is of the highest importance and any decisions will be made in the best interest of health and safety. Once you have applied for the program, your contact information will be on file, and you will be notified if there are any changes to course format. Information will also be posted on the GCRL Summer Field Program Facebook page. The most up to date university-wide information can be found on USM’s COVID-19 response website:

https://www.usm.edu/covid-19/index.php

QUESTIONS?
margaret.firth@usm.edu
gcrl.usm.edu/summer_field
228.818.8852
Undergraduate Students

Apply to the GCRL Summer Field Program at usm.edu/GCRL-apply.

1. $40 non-refundable application processing fee for undergraduate students (fees not applicable to current USM students) — Make check payable to The University of Southern Mississippi.

2. Official transcript (electronic transcripts preferred, send to margaret.firth@usm.edu)

3. Copy of immunization records

Graduate Students

To apply, contact Margaret Firth for admission instructions at 228.818.8852 or margaret.firth@usm.edu.

ADMISSION DEADLINE

All application materials MUST be submitted by APRIL 30, 2021.