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 2023 Summer Field Program and gain the experience of a lifetime!
BARRIER ISLAND ECOLOGY
This field course will familiarize students with concepts of coastal ecology with emphasis on the diversity of plant and animal communities unique to the northern Gulf of Mexico barrier islands. Field excursions to barrier islands will be conducted during this course. Topics covered include marshes, intertidal and shallow subtidal communities, vegetation, invertebrates, mammals, birds, reptiles, and geologic processes of island dynamics. Prerequisites: Background in biology, botany or geology recommended. COA 448/448L: Barrier Island Ecology. 3 credit hours (2/1).
This course will run approximately 11 consecutive class days during the first half of the June term. Students may enroll in this course and either CETACEAN BEHAVIOR OR Coastal Environments in Peril in the same term.

CETACEAN BEHAVIOR
Students will learn tools and techniques used in the systematic observation and documentation of delphinid behavior in the wild. Course includes both classroom lecture and field studies focused primarily on dolphins of the Mississippi Sound. Prerequisites: None. COA 444: CETACEAN BEHAVIOR. 3 credit hours. This course will run approximately 11 consecutive class days during the second half of the June term. Students may enroll in this course and either Barrier Island Ecology OR Coastal Restoration in the same term.

COASTAL RESTORATION
This course will provide an overview of coastal restoration along the Gulf Coast. Through lectures and field excursions to restoration sites in Mississippi, Alabama and Florida, students will gain first-hand experience with different restoration techniques at both large and small scales and across a variety of habitats (e.g., marsh, oyster, mangrove, seagrass, dunes, springs). Students will also get an overview of how to identify needs, set goals, plan, design, implement, monitor and evaluate restoration projects. Prerequisites: Two semesters of biology or permission of instructor. COA 451/551: Coastal Restoration. 3 credit hours. This course will run approximately 11 consecutive class days during the first half of the June term. Students may enroll in this course and either CETACEAN BEHAVIOR OR Coastal Environments in Peril in the same term.

ELASMOMBRANCH 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).

COASTAL ENVIRONMENTS IN PERIL
This course will explore a wide range of environmental issues, facing our coasts. General scientific issues, as well as political and administrative issues will be discussed. Topics covered will include sea level rise, habitat loss, climate change, and other anthropogenic impacts on coastal environments. COA 306: Coastal Environments in Peril – Critical Issues. 3 credit hours. This course will run approximately 11 consecutive class days during the second half of the June term. Students may enroll in this course and either Barrier Island Ecology OR Coastal Restoration in the same term.

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).

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, designing and conducting behavioral experiments, and collecting and analyzing behavioral data. The course will consist of lectures and laboratory activities designed to provide students with 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 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. Prerequisites: 16 hours of biology or permission of instructor. COA 443/543, 443L/543L: Marine Mammals. 5 credit hours (3/2).

Online courses will be 100% online and conducted through USM’s online learning platform, Canvas. Students are expected to have access to a computer and reliable Internet connection and should expect a combination of synchronous and asynchronous content.
MARINE ECOLOGY
A study of marine organisms and their relationships to the environment, including such topics as primary production, populations and communities, biogeochemical cycles, trophic ecology, larval ecology and human influences. Laboratory involves weekly quantitative studies implemented as class projects. Prerequisites: Four semesters of science or permission of instructor. COA 446/546, 446L/546L: Marine Ecology. 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 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, threats, conservation of habitat and species, human impacts, solutions and policy. The course will consist of field trips, lectures and laboratory exercises designed to provide students with 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 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 subdisciplines: 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).

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 TOXICOLOGY
Marine toxicology is the study of how pollutants and toxins impact the marine environment. This includes everything from algae to whales. Students will be introduced to the fundamentals of toxicology, including dose, exposure and metabolism. Students will also engage in lectures and open discussions relating to major xenobiotics, molecular and analytical techniques, current topics in marine toxicology (oil spills, harmful algal blooms, microplastics, etc.), and experimental design. Lab activities will focus on experiential design and basic data interpretation. Prerequisites: 2 semester of biology and 2 semesters of chemistry or permission of instructor. COA 490/590: Special Topics - Marine Toxicology. 5 credit hours.

SESSION II ONLINE
Online courses will be 100% online and conducted through USM’s online learning platform, Canvas. Students are expected to have access to a computer and reliable Internet connection and should expect a combination of synchronous and asynchronous content.

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 Dr. Laura Blackmon for further information at 228.818.8812 or sfp@usm.edu.
UNDERGRADUATE Course Fees
Note: A non-refundable application processing fee of $45 is required to process application materials. Students may enroll in a maximum of 6 credit hours of in-person coursework OR 11 credit hours of online coursework each session. If you are applying for multiple sessions, only a single application fee is required. If taking multiple courses, add the total cost for EACH course.

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<th>Term</th>
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<th>Tuition ($385/hour)</th>
<th>Capital Improvement Fee ($2.97/hour; $35 max per term)</th>
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Session II: July Term
Oceanography
Marine Conservation
Marine Ecology
Marine Ichthyology
Marine Invertebrate Zoology
Marine Toxicology
Research Study Program

GRADUATE Course Fees
Note: A non-refundable application processing fee of $60 is required to process application materials. Students may enroll in a maximum of 6 credit hours of in-person coursework OR 11 credit hours of online coursework. If you are applying for multiple sessions, only a single application fee is required. If taking multiple courses, add the total cost for EACH course.

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All fees are subject to change without notice. Fees do not include books, supplies, etc. ($75-$200, depending on course).
For more information about GCRL Summer Field Program, visit usm.edu/sfp.

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

PARKING PERMIT
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-transit-services/index.php. USM students with a valid annual permit do not need to purchase a summer permit for GCRL.
All courses offered through The University of Southern Mississippi’s School of Ocean Science and Engineering 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 after the summer, contact the USM Registrar’s Office at 601.266.5006 or visit transcripts.usm.edu.

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 most up-to-date university-wide information can be found on USM’s COVID-19 response website:

usm.edu/covid-19

QUESTIONS?
Email: sfp@usm.edu
usm.edu/sfp
228.818.8812
A premier marine laboratory on the Gulf of Mexico, The University of Southern Mississippi’s Gulf Coast Research Laboratory is home to the School of Ocean Science and Engineering’s Division of Coastal Sciences, Marine Education Center, Center for Fisheries Research and Development, and the Thad Cochran Marine Aquaculture Center.

APPLICATION REQUIREMENTS/PROCESS

Undergraduate Students

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

☐ Submit the $45 non-refundable application processing fee for undergraduate students (fees not applicable to current USM students). Make check payable to The University of Southern Mississippi. Electronic or credit card payments cannot be accepted.

☐ Official transcript (electronic transcripts may be sent to sfp@usm.edu)

☐ Copy of immunization records

For questions, contact sfp@usm.edu or call 228.818.8812.

Graduate Students

To apply, contact Dr. Laura Blackmon for admission instructions at 228.818.8812 or sfp@usm.edu.

Official transcript and immunization record may be emailed to Jessica.Kastler@usm.edu or mailed to the below address. Application fee must be mailed.

OFFICE OF STUDENT SERVICES
Gulf Coast Research Laboratory, Attn: Dr. Jessica Kastler
703 East Beach Drive • Ocean Springs, MS 39564

ADMISSION DEADLINE

All application materials MUST be submitted by APRIL 7, 2023.