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 2020 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), Jill Hendon

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), Dr. Virginia Fleer

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), Dr. Eric Lovely

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), Dr. Jessica Kastler
**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.

**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), Dr. Virginia Fleer

**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. Students must work effectively alone and in teams and participate in field expeditions to complete the course objectives. 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), Dr. Michael Andres

**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), Dr. Peter Adam

**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), Dr. Jesse Filbrun
## 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

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<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>
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### ROOM AND BOARD FEES

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

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<td>Term and Session</td>
</tr>
<tr>
<td>Fee</td>
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### 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.

APPLICATION REQUIREMENTS/PROCESS

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 19, 2020.

Official transcript, application fee and immunization record can be sent electronically to margaret.firth@usm.edu or mailed to the OFFICE OF STUDENT SERVICES Division of Coastal Sciences Gulf Coast Research Laboratory, Attn: Margaret Firth 703 East Beach Drive • Ocean Springs, MS 39564

QUESTIONS?
margaret.firth@usm.edu gcrl.usm.edu/summer_field 228.818.8852
A premier marine laboratory on the Gulf of Mexico, The University of Southern Mississippi’s Gulf Coast Research Laboratory is home to the Division of Coastal Sciences, Marine Education Center, Center for Fisheries Research and Development and the Thad Cochran Marine Aquaculture Center.

OUR AFFILIATES

**MISSISSIPPI** – Alcorn State University, Lorman; Belhaven College, Jackson; Delta State University, Cleveland; Jackson State University; Millsaps College, Jackson; Mississippi College, Clinton; Mississippi State University, Starkville; Mississippi University for Women, Columbus; Mississippi Valley State University, Itta Bena; Rust College, Holly Springs; The University of Mississippi, Oxford; The University of Southern Mississippi, Hattiesburg; William Carey University, Hattiesburg; **ALABAMA** – Auburn University; **ARKANSAS** – Arkansas Tech University, Russellville; Hendrix College, Conway; Southern Arkansas University, Magnolia; University of Arkansas at Ft. Smith; University of Arkansas at Little Rock; University of Arkansas at Monticello; University of Central Arkansas, Conway; University of the Ozarks, Clarksville; **FLORIDA** – University of Tampa; **GEORGIA** – Berry College, Rome; Shorter College, Rome; **ILLINOIS** – North Central College, Naperville; Southern Illinois University, Carbondale; **INDIANA** – University of Evansville; **IOWA** – Drake University, Des Moines; Iowa State University, Ames; Wartburg College, Waverly; **KENTUCKY** – Eastern Kentucky University, Richmond; Morehead State University; **LOUISIANA** – Louisiana State University, Baton Rouge; Southeastern Louisiana University, Hammond; Xavier University of Louisiana, New Orleans; **MICHIGAN** – Central Michigan University, Mount Pleasant; **MISSOURI** – Central Methodist University, Fayette; Northwest Missouri State University, Maryville; Southeast Missouri State University, Cape Girardeau; Missouri State University, Springfield; Truman State University, Kirksville; **NEW YORK** – State University of New York, Potsdam; **OKLAHOMA** – Northeastern State University, Tahlequah; Southwestern Oklahoma State University, Weatherford; **SOUTH CAROLINA** – Presbyterian College, Clinton; **TENNESSEE** – Belmont University, Nashville; Carson-Newman College, Jefferson City; Christian Brothers University, Memphis; Middle Tennessee State University, Murfreesboro; Rhodes College, Memphis; Tennessee State University, Nashville; Tennessee Technological University, Cookeville; Tennessee Wesleyan College, Athens; Trevecca-Nazarene University, Nashville; University of Memphis; University of Tennessee at Chattanooga; University of Tennessee at Martin; **WISCONSIN** – University of Wisconsin at Eau Claire; University of Wisconsin at Stevens Point

The University of Southern Mississippi
School of Ocean Science and Engineering
Division of Coastal Sciences / Gulf Coast Research Laboratory
703 East Beach Dr. • Ocean Springs, MS 39564

GCRL Summer Field Program

EOE/F/M/VETS/DISABILITY