



THE UNIVERSITY OF  
**SOUTHERN**  
**MISSISSIPPI**

SCHOOL OF OCEAN SCIENCE  
AND ENGINEERING  
at the  
GULF COAST RESEARCH  
LABORATORY



**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 laboratories, library, and specimen museum.

# SUMMER FIELD PROGRAM 2024



**SUBMIT YOUR  
APPLICATION TODAY**  
to Attend the 2024  
Summer Field Program  
and Gain the  
*Experience of  
a Lifetime!*

# Session I *June Term*

## 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: Three semesters of biology, including marine biology, or permission of the instructor. COA 422/522, 422L/522L: Elasmobranch Biology. 6 credit hours (3/3).



## MARINE ECOLOGY

This course is 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 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 the 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 I / Half of June Courses

### CETACEAN BEHAVIOR

Students will learn tools and techniques used in systematically observing and documenting delphinid behavior in the wild. The course includes both classroom lectures and field studies focused primarily on dolphins of the Mississippi Sound. Prerequisites: None. COA 444: Cetacean Behavior. 3 credit hours. *This course will run 11 consecutive class days during the SECOND half of the June term.*

### COASTAL ENVIRONMENTS IN PERIL

This course will explore a wide range of environmental issues facing our coast. General scientific issues will be discussed. Topics covered will include sea-level rise, habitat loss, climate change, and other anthropogenic impacts on coastal environments in peril. COA 306: Coastal Environment in Peril – Critical Issues. 3 credit hours. *This course will run 11 consecutive class days during the SECOND half of the June 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 the instructor. COA 441/551: Coastal Restoration. 3 credit hours. *This course will run 11 consecutive class days during the FIRST half of the June term.*

### ENVIRONMENTAL PHOTOGRAPHY

This course will develop an awareness of our environment and convey this understanding through the medium of photographic image. Student will gain a fuller understanding of interrelationships in the environment. This class includes studies of the structure and function of ecosystem (emphasizing aquatic environments) and examines selected environmental concerns through field trips. Prerequisites: Basic awareness of environmental issues. COA 490/590: Special Topics – Environmental Photography. 3 credit hours. *This course will run 11 consecutive class days during the FIRST half of the June term.*

## SESSION I ONLINE

### MARINE MAMMALS

This course is an overview of the biology of marine mammals (cetaceans, pinnipeds, sirenians, otters, and polar bears) 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.*

# Session II July Term

## 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 ICHTHYOLOGY

Marine ichthyology is an intensive marine biological field course that 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 the 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 SCIENCE II: MARINE BIOLOGY

This course takes an ecological approach to understanding 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 Biology. 5 credit hours (3/2).



## MARINE TOXICOLOGY

Marine toxicology is the study of how pollutants and toxins impact the marine environment, including everything from algae to whales. Students will be introduced to the fundamentals of toxicology and learn about animal exposure in the environment. Students will also engage in lectures and open discussions relating to major xenobiotics, molecular and analytical techniques, and 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: Two semesters of biology and two semesters of chemistry or permission of instructor. COA 490/590: Special Topics – Marine Toxicology. 5 credit hours.

## SESSION II ONLINE

### MARINE INVERTEBRATE ZOOLOGY

This course is a concentrated study of the marine and estuarine invertebrates from the Mississippi Sound and the 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).

*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 **Session 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: Four semesters of biology or permission of instructor. Special Problems: Research. One to six hours credit is available and is assigned by the instructor. Contact SFP staff for further information at 228.818.8812 or [sfp@usm.edu](mailto:sfp@usm.edu).

# Course Fees

## 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.

Term	Course	# of credit hours	Tuition (\$397/hour)	Capital Improvement Fee (\$2.92/hour; \$35 max per term)	Field Fee	Lab Fee	Online Fee	Total Cost per Course
Session I: June Term	Cetacean Behavior	3	\$1,191	\$8.76	\$500	---	---	\$1,699.76
	Coastal Environments in Peril	3	\$1,191	\$8.76	\$200	---	---	\$1,399.76
	Coastal Restoration	3	\$1,191	\$8.76	\$500	---	---	\$1,699.76
	Environmental Photography	3	\$1,191	\$8.76	\$200	---	---	\$1,399.76
	Oceanography	5	\$1,985	\$14.60	\$500	\$60	---	\$2,559.60
	Marine Ecology	5	\$1,985	\$14.60	\$500	\$60	---	\$2,559.60
	Elasmobranch Biology	6	\$2,382	\$17.52	\$500	\$60	---	\$2,959.52
	Marine Mammals (online)	5	\$1,985	\$14.60	---	---	\$100	\$2,099.60
	Research Study Program	1-6	\$397/hour	\$2.92/hour	---	---	---	varies
Session II: July Term	Marine Biology	5	\$1,985	\$14.60	\$500	\$60	---	\$2,559.60
	Marine Conservation	5	\$1,985	\$14.60	\$500	\$60	---	\$2,559.60
	Marine Toxicology	5	\$1,985	\$14.60	---	---	---	\$1,999.60
	Marine Ichthyology	6	\$2,382	\$17.52	\$800	\$60	---	\$3,259.52
	Marine Invertebrate Zoology (online)	6	\$2,382	\$17.52	---	---	\$120	\$2,519.52
	Research Study Program	1-6	\$397/hour	\$2.92/hour	---	---	---	varies

## 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.

Session I: June Term	Coastal Restoration	3	\$1,587	\$11.67	\$500	---	---	\$2,098.67
	Environmental Photography	3	\$1,587	\$11.67	\$500	---	---	\$2,098.67
	Marine Ecology	5	\$2,645	\$19.45	\$500	\$60	---	\$3,224.45
	Elasmobranch Biology	6	\$3,174	\$23.34	\$500	\$60	---	\$3,757.34
	Marine Mammals (online)	5	\$2,645	\$19.45	---	---	\$100	\$2,764.45
	Research Study Program	1-6	\$529/hour	\$3.89/hour	---	---	---	varies
Session II: July Term	Marine Conservation	5	\$2,645	\$19.45	\$500	\$60	---	\$3,224.45
	Marine Toxicology	5	\$2,645	\$19.45	\$500	---	---	\$3,164.45
	Marine Ichthyology	6	\$3,174	\$23.34	\$800	\$60	---	\$4,057.34
	Marine Invertebrate Zoology (online)	6	\$3,174	\$23.34	---	---	\$120	\$3,317.34
	Research Study Program	1-6	\$529/hour	\$3.89/hour	---	---	---	varies

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](http://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 and board on your application, and the GCRL Housing and Conference Services manager

2024 GCRL Summer Field Program: Room & Board Fees			
Session	Session I: June Term	Half of Session I: June Term (taking <u>one</u> 3 credit course)	Session II: July Term
Fee	\$1,575	\$790	\$1,840

## 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](http://usm.edu/parking). 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 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](https://transcripts.usm.edu).



**QUESTIONS?**  
**[sfp@usm.edu](mailto:sfp@usm.edu)**  
**[usm.edu/sfp](https://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.

## Undergraduate Students

- Apply to the GCRL Summer Field Program at [usm.edu/sfp](http://usm.edu/sfp).
- 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](mailto:sfp@usm.edu))
- Copy of immunization records

For questions, contact [sfp@usm.edu](mailto:sfp@usm.edu) or call 228.818.8812.

## Graduate Students

To apply, contact the Summer Field Program for admission instructions at 228.818.8812 or [sfp@usm.edu](mailto:sfp@usm.edu).

**Official transcript and immunization records** may be emailed to [sfp@usm.edu](mailto:sfp@usm.edu) or mailed to the below address. Application fee must be mailed.

**OFFICE OF STUDENT SERVICES  
SUMMER FIELD PROGRAM**  
Gulf Coast Research Laboratory  
703 East Beach Drive • Ocean Springs, MS 39564

## ADMISSION DEADLINES

Early Selection - April 5, 2024  
Final Deadline - All application materials **MUST** be submitted by **MAY 1, 2024**.



Scan here to learn more about Summer Field Program.



GCRL Summer Field Program



Check us out on YouTube.