

MARS 4500–Field Study in Oceanography and Marine Methods
Fall 2022–Semester at Skidaway
 Course Information Sheet

Instructor:

Dr. Natalie Cohen
 Assistant Professor
 Department of Marine Sciences
cohen@uga.edu
 (912) 598-2312
 Skidaway Campus
 MCSRIC Building #108

Grading Policy: Two exams and a practical exam will be given, each of which will count for 13.33% of the course grade.

In-class activities count for the remaining 60% of the course grade, consisting of grades for lab activities, learning exercises, and class presentations.

The following is a general guide for letter grade assignment in this course. The exact correspondence between calculated number grades and assigned letter grades is at the discretion of Dr. Cohen, but grade cutoffs will not be higher than indicated here (for example, the cutoff for an A could be lower than 90, but will not be higher).

100–93.00	A	89.99–87.00	B+	79.99–77.00	C+	69.99–60.00	D
		86.99–84.00	B	76.99–74.00	C	< 60.00	F
92.99–90.00	A-	83.99–80.00	B-	73.99–70.00	C-		

Course Objective: Students will learn the basic physical, chemical, and geological oceanographic processes which operate in the coastal zone. Emphasis will be placed on the interrelationship among the subdisciplines of coastal oceanography, with intensive instruction in laboratory methods and field measurements. Field trips will include day trips on small boats and participation in ongoing investigations on estuarine, coastal, and shelf processes locally on Skidaway Island. In addition to learning about the basic oceanographic research problems in the nearshore zone, students will also learn about environmental problems inherent to this region. Students will be evaluated on their participation in the lecture, laboratory, and field components.

Expected Learning Outcomes

1. Students will be familiar with the transformation of chemical species in coastal systems and methods for quantifying them
2. Students will be familiar with the types of microorganisms commonly found in coastal environments, the ways in which they interact with their environment, and how to identify them
3. Students will be familiar with physical processes structuring coastal systems and gain experience working with physicochemical data
4. Students will be familiar with geological features of the coastal ocean
5. Student mastery of the material will be measured by 2 exams, 1 practical class activities, and 1 research presentation.

Experiential Learning : This course is at its core experiential; it gives students hands-on experience with state-of-the-art oceanographic equipment and techniques. It provides students with the opportunity to analyze samples collected during the accompanying MARS 4850 (Oceanographic Field Expedition) course, synthesize results, and communicate those research findings in a professional oral presentation.

Purpose: To introduce undergraduate students to common oceanographic field methods and laboratory sampling techniques. Students will receive background information in sampling approaches during lectures, and hands-on training during guided activities and field trips. This course is a required component of the UGA Ocean Science Major (B.S.) and the Semester at Skidaway program.

Structure : MARS 4500 is a 3 credit course held during the fall semester of the Semester at Skidaway program. Housing on campus will be included in the course cost. The Semester at Skidaway will commence Aug. 29 and end on Nov. 10. **To allow for sample collection onboard the research cruise before this class begins, MARS 4500 will meet for the first time on Sept. 13 and run until Nov. 10, on a Tuesday/Thursday schedule. Class time will be broken into two 125 min periods to facilitate classroom -based lectures followed by hands-on lab or field activities.**

Lectures, laboratory, and field exercises will cover the following topics as they apply to the coastal zone. Emphasis will be placed on interrelationships between physical, chemical, biological, and geological processes, with some consideration of anthropogenic influences on coastal processes. Laboratory analyses are concentrated at the beginning of the course to allow skills to be developed before applying to samples collected on the MARS 4850 research cruise. Empty lab slots are time allocated to working up cruise data from MARS 4850 and preparing for the final presentation (*).

Schedule(subject to revision; updated August 15, 2022):

Date	Lecture Topic	Lab/Field Topic
	I. BIOLOGICAL SYSTEM	
Sept. 13	Biological carbon pump	Microscopy & diversity lab
Sept. 15	Microbial food webs I	Chlorophyll extractions & FlowCAM
Sept. 20	Microbial food webs II	Flow cytometry & Zooscan
Sept. 22	Organism-Geochemical Interactions	Nutrient amendments
Sept. 27	Continental shelf biogeochemistry	<u>Cruise prep</u>
	II. CHEMICAL CONTROLS	
Sept. 29	Water column processes	Dissolved oxygen titrations
Oct. 4	Organic matter sources and sinks	Ammonium quantification
Oct. 6	Biogeochemical and elemental cycling In the coastal zone I	Dock sampling & vertical profiling
Oct. 11	Exam 1	Practical
Oct. 13	Biogeochemical and elemental cycling In the coastal zone II	Dissolved & dissolvable Fe quantification
	III. GEOLOGICAL PROCESSES	
Oct. 18	Coastal and marine sediments (Guest Lecture by Clark Alexander)	Sediment analysis
Oct. 20	Coastal geologic processes & barrier islands	Class time for cruise processing
Oct. 25	Anthropogenic impacts	Class time for cruise processing
Oct. 27	Class presentations	
	IV. PHYSICAL ENVIRONMENT	
Nov. 1	Coastal physical oceanographic processes I	Small boat surveys & YSIs
Nov. 3	Coastal physical oceanographic processes II	Water mass mixing
Nov. 8	Offshore physical oceanographic processes	Plotting ocean sections with Ocean Data View
Nov. 10	Exam 2	Lab clean-up

Changes to the course syllabus: The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary. Failure to regularly attend class may result in your being uninformed about changes in the course content or timing of assignments. Students who miss class are responsible for all announcements and assignments given in lecture.

Attendance: You must be in class to participate in an activity, and these cannot be made up.

Electronics Use Policy: Please refrain from using your phone during class and use your computer only for lecture related activities.

Academic Honesty Policy: Academic honesty: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at: <https://honesty.uga.edu/Academic-Honesty-Policy/>. All academic work must meet the standards outlined in "A Culture of Honesty" found at: <http://honesty.uga.edu/>.

Resources for student-parents: Resources for Student-Parents: If you or someone you know is in a phase of life that involves parenting (or the expectation of parenting), there are resources available to assist you. Student Care and Outreach within the Office of the Dean of Students is available to provide you with important information and resources; you can contact them at 706-542-7774.

Mental health and wellness resources: If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services. UGA has several resources for a student seeking mental health services (<https://www.uhs.uga.edu/bewelluga/bewelluga>) or crisis support (<https://www.uhs.uga.edu/info/emergencies>). Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: <https://caps.uga.edu/>, TAO Online Support (<https://caps.uga.edu/tao/>), 24/7 support at 706-542-2273.

If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<https://www.uhs.uga.edu/bewelluga/bewelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center. Additional resources can be accessed through the UGA App.

Accommodations due to disabilities: I am committed to making sure my course and materials are affirming of students living with disabilities. If you plan to request accommodations for a disability, please register with the Disability Resource Center (DRC). The DRC can be reached by visiting Howell Hall, by calling 706-542-8719 (voice) or 706-542-8778 (TTY), or by visiting <http://drc.uga.edu>.

Diversity, equity and inclusion : Diversity encompasses acceptance and respect. The term "diversity" encompasses differences of culture, background and experience among individuals and groups. Such differences include, but are not limited to, differences of race, ethnicity, national origin, color, gender, sexual orientation, gender identity, age, and abilities as well as political and religious affiliation and

socioeconomic status. The College of Family and Consumer Sciences at the University of Georgia embraces a commitment to diversity by modeling for the state and nation, a community of individuals and programs which seek to reduce prejudice, disparities, and discrimination and build a supportive environment for all. [More about diversity.](#)

Any student who faces challenges securing their food and believes this may affect their performance in the course is urged to contact Semester at Skidaway administration for support. Furthermore, please notify me as the professor if you are comfortable in doing so. This will enable me to provide resources in the College and University.

FERPA Notice The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. FERPA allows disclosure of directory information (name, address, telephone, email, date of birth, place of birth, major, activities, degrees, awards, prior schools), unless a https://reg.uga.edu/_resources/documents/imported/FERPARequestForRestriction.pdf is submitted to the Registrar's Office.

UGA Coronavirus (COVID-19) Information and Resources: As the COVID-19 pandemic transitions and public health conditions and treatments improve, UGA will begin treating COVID-19 as we do any other infectious disease cases. [Read more about the changes to UGA's COVID campus response, effective May 16, 2022](#)

As always, if viral conditions change substantially, we will be ready to adapt to keep our community safe. We are constantly monitoring local, national, and global viral conditions and will make changes to our policies if necessary.