

Marine Biology

Syllabus

Welcome to Marine Biology! I look forward to working with each of you this semester as we explore the wonderful world of the oceans. This course is for you, so if there are specific ways that I can support you as you work to your goals, please let me know.

Course Description. Students in this course will dive into the biology of marine life, from tidepools to trenches. Course themes include the vast diversity of marine organisms, adaptations to distinct marine environments, and human impacts on marine systems. The course consists of lecture and a weekly two-hour lab. Students will also learn methods in marine research and conduct a literature review and presentation on a topic of their choosing. *Prerequisites: Biology Proficiency and BIOL 203.* Credits: 4(3-1).

Course Meetings.

Lecture

Monday, Wednesday, Friday	9:30 – 10:20 am	ISC 136
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Lab

Wednesday	2:00 – 3:50 pm	ISC 203
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Instructor. Dr. Mackenzie Gerringher ISC 255 gerringher@geneseo.edu

Office Hours. Mon. 10:30 – 11:20 am; Wed. 10:30 – 11:20 am, 1:00 – 1:50 pm;
and By Appointment

Office hours are your time for getting questions answered, course expectations clarified, advice on pursuing opportunities or careers in science and more! You do not need an appointment for office hours, just stop by. Office hours will be held in The Nucleus, ISC 232. Please email me (gerringher@geneseo.edu) or chat before/after class if you have questions or would like to set up a meeting outside of office hours.

Learning Outcomes

During this course, we will:

- Explore the biodiversity of marine systems across phylogeny and habitat.
- Understand adaptations to marine environments at molecular, organismal, and community levels.
- Develop and practice strategies for finding, reading, and critiquing scientific papers.
- Engage in critical thinking and dialogue about human impacts on marine systems.
- Research, synthesize, and present scientific information effectively through written and oral projects in the classroom and lab.

How this course fits into your biology education...

This course will help you work toward the following Biology Program Learning Outcomes:

1. Students will have the knowledge base and intellectual (conceptual) framework to use reasoning and problem-solving skills to; (1) read critically, (2) evaluate support for competing hypotheses, and (3) critique experimental design. Level: Reinforcement.
2. Students will have the laboratory and inquiry skills and technical ability to formulate hypotheses, design and run experiments using instruments to test their hypotheses, and analyze and interpret the results. They will be able to build on earlier work to design further experiments. Level: Introduction.
3. Students will be able to communicate biological ideas from literature or their own laboratory investigations to audiences of biologists and non-biologists in a variety of formats including written reports, poster and oral presentations. Level: Reinforcement.
4. Students will recognize the importance of scientific integrity and ethical research and applications of biology to science policy. They will be able to work independently and in teams for life-long learning. Level: Reinforcement.
5. Students will be able to demonstrate a broad and diverse background in biology and related sciences and a strong foundation for graduate and professional programs of study or employment. Level: Reinforcement.
6. Students will recognize evolution as the central tenet of biology, which explains the unity and diversity of life and interrelatedness of levels of biological organization. Level: Reinforcement.

Integrative and Applied Learning in Marine Biology

This course serves the following Integrative and Applied Learning objectives:

- Integrate multiple bodies of knowledge with their personal experience by asking meaningful questions about real-world problems.
- Apply skills, theories, and methods gained in academic study, professional experiences, and/or co-curricular experiences to new situations.
- Reflect upon changes in their learning and outlook over time and integrate into their future endeavors based on that self-reflection.

Course Materials. *Textbook: Marine Biology: Function, Biodiversity, Ecology.* Jeffrey Levinton, 6th Edition, 2021. There are two copies of the textbook available for you to use in the library's course reserves for 1 day loans and two copies that are available for 16-week loan. [RedShelf](#) offers a digital rental of the text for \$60. Corresponding readings for lecture topics are provided in the schedule. Other editions of this text may also be used. Page numbers in the schedule apply to the 6th edition of this text.

Scientific Papers. We will also explore primary research in marine biology. These readings are available on Brightspace. Article response worksheets will help you develop strategies for reading scientific papers. Please submit these article responses for three of the four readings. For one reading, we will have a mini-journal club to discuss the studies, questions we come across, and what we'd do next to advance the field.

Course Technology. Additional materials will always be available on Brightspace and our class Google Drive folder for those looking to dive deeper into these topics. We have discussion threads for questions about the course, material, or research opportunities. If you see internship opportunities or neat marine science news, please share! We will also be learning and using some common tools for accessing and analyzing marine data, including R. All software we use will be freely available to download, with links provided on Brightspace.

Course Expectations.

Much of the value of this course will come from our in-class activities and discussions. Therefore, attendance is expected when safe and possible for you to do so and active participation will be part of your course grade. In class, you will not be graded on whether your answers are right or wrong. Engage with the course materials and activities to the best of your abilities to receive in-class participation credit. If you cannot join a synchronous class session, please plan on completing an alternative response on Brightspace. Submit any participation make-up assignments to Brightspace by the date of the next check-in assignment. Please reach out to me to discuss potential or needed extended absences. The earlier you get in touch about questions or concerns, the more options we will have.

Assignments & Grading.

Course grades will be based on participation in class, reading responses, projects, lab activities, and exams, which are designed to be inclusive for different learning styles and help you track your progress as you build your understanding of marine biology. Assignment summaries are included below, with further details, rubrics, and resources provided on Brightspace and in class throughout the semester. Please feel free to reach out if there are questions about grading policies and course expectations. Course scores total 300 points.

Article Responses

15% of course grade

Four scientific journal articles will supplement our textbook reading. For three of these, write a short response on the worksheet provided and turn in your notes on the paper, for example by submitting a scanned pdf with your notes in the margins

of the text (*10 points each*). For one other article, meet with the instructor in groups of three for a short (~15 min) journal club discussion on the reading (*15 points*). Sign up for your journal club discussion by Sept. 5th.

Peoples et al. 2024	Algae-Eating Isopod	Sept. 5 th
Patek 2019	Mantis Shrimp Strike Biomechanics	Sept. 12 th
Amon et al. 2016	Polymetallic Nodules	Sept. 26 th
McKnight et al. 2025	Oxygen and Seal Diving	Nov. 14 th

Topic Presentation *15% of course grade*

Prepare a talk on a topic in marine biology that interests you. Submit a topic proposal (*10 points*) and a presentation outline and draft slides (*10 points*) for feedback. Talks will be given in class, 10/27–10/31 (*25 points*). Slides for all presenters are due to Brightspace by 8 am on 10/27.

Topic Proposal	Sept. 19 th	<i>10 points</i>
Outline & Draft Slides	Oct. 17 th	<i>10 points</i>
Topic Presentation	Oct. 27 th	<i>25 points</i>

Human Impacts Project *10% of course grade*

How will you share your marine science expertise beyond the classroom? Create an engaging, informative project to communicate one human impact on marine systems to a public audience. Alternatively, you may communicate an example of bioinspiration from the marine realm. You may work individually or in pairs. For individuals, please build your project evidence from three scientific sources, for pairs, use six sources (*30 points*).

Optional Topic Check	Nov. 7 th	
Human Impacts Project	Nov. 24 th	<i>30 points</i>

Lab *20% of course grade*

For our first month, each lab will have a corresponding worksheet with questions to synthesize the material (*5 points each*). Lab worksheets are due the following Wednesday at the beginning of lab.

Lab Activity 1	Sept. 3 rd	<i>5 points</i>
Lab Activity 2	Sept. 10 th	<i>5 points</i>
Lab Activity 3	Sept. 17 th	<i>5 points</i>
Lab Activity 4	Sept. 24 th	<i>5 points</i>

For our remaining labs, we will conduct original research projects in marine biology. We will work collaboratively and rely on the contributions of everyone in the group to complete the research. Each individual will be graded on their research

contribution (10 points), a figure you generate from our data (10 points), and your contribution to your lab research paper (20 points). Further details on expectations will be provided as the project progresses.

Research Reflection	Nov. 12 th	10 points
Research Figure	Nov. 19 th	10 points
Lab Research Paper	Dec. 3 rd	20 points

Exams 30% of course grade

Exams will cover the material presented in class and the textbook to track our progress and synthesize our understanding. *Mid-Term, 13%*. The mid-term exam will be a written, closed-book test held on Wednesday, October 8th (40 pts). *Final, 17%*. The final exam will be a closed-book, cumulative synthesis of our course material on Friday, December 16th, 8:00–11:20 am (50 pts).

Mid-Term Exam	Oct. 8 th	40 points
Final Exam	Dec. 16 th	50 points

Participation Every Class 10% of course grade

Earn full participation credit by engaging with in class activities and discussions or submitting participation make-up assignments for necessary absences (30 points). To actively participate in this course, ask questions, share your insights during class discussions, engage with lab activities and research, and post to Brightspace discussions. Five check-in assignments will help us keep track of participation and course engagement goals. These check ins will be due 8/29 (3 pts), 9/26 (7 pts), 10/22 (7 pts), 11/10 (6 pts), 11/21 (7 pts).

Grade Breakdown. Letter grades are displayed in Brightspace throughout the semester to help you track progress toward your goals. Grades in the course are set as follows, without rounding. A 100–94%; A- <94–90%; B+ <90–87%; B <87–84%; B- <84–80%; C+ <80–77%; C <77–74%; C- <74–70%; D <70–60%; E <60%.

Resources & Policies.

Course Policies. Late assignments and make-up assignments will be accepted only with extenuating circumstances, and only when these accommodations are discussed in advance of the deadline. If you have an emergency or foresee a scheduling conflict on an assignment or presentation, please contact me as soon as possible and we may be able to work something out on a case-by-case basis. The earlier you reach out about issues, the more options we have. You can typically expect email responses from me within one business day. Grade review requests for assignments are available only within two weeks of receiving feedback.

Lab Safety. Close-toed shoes and long pants or a long skirt are required for participation in lab. For your safety, eating, drinking, and gum-chewing are not permitted in the lab. Additional safety

resources and guidelines will be provided in lab during our first meeting. If you have any questions or concerns regarding lab safety, please do not hesitate to reach out.

Marine Science Resources. Further readings, resources, activities, career and internship opportunities will be available on the Brightspace page. Please do not hesitate to reach out if you have questions about the material or want to know more about a topic.

Useful Links for Marine Science.

Review of Latitude & Longitude: <https://www.thoughtco.com/latitude-and-longitude-1433521>
Real-Time Visualization of Winds and Currents: <https://earth.nullschool.net/>
National Data Buoy Center Resources: <http://www.vos.noaa.gov/mwl.shtml>
The Argo Float Network: http://www.aoml.noaa.gov/phod/argo/how_argo_works.php
NOAA Okeanos Explorer Live Feed <https://oceanexplorer.noaa.gov/livestreams/welcome.html>
Ocean Networks Canada, Data and Resources: <http://www.oceannetworks.ca/>
Ocean Observatories Initiative: <https://oceanobservatories.org/>
Hawaii Ocean Time Series, 30 years of Oceanographic Data: <http://hahana.soest.hawaii.edu/hot/>
Understanding Climate Change: <http://www.realclimate.org/>
<https://data.giss.nasa.gov/gistemp/news/>
<https://interactive-atlas.ipcc.ch/>

SUNY Geneseo's Commitments, Mission, and Values. SUNY Geneseo has several core documents that articulate our shared commitments and learning objectives. These include:

- [SUNY Geneseo Mission, Vision and Values](#)
- [Community Commitment to Diversity, Equity, and Inclusion](#)
- [Geneseo Learning Outcomes for Baccalaureate Education](#)

Land Acknowledgment. Land acknowledgements are expressions of sorrow and remembrance to those whose historic territory one resides on. Geneseo resides on the homeland of the Seneca Nation of Indians and Tonawanda Seneca Nation. We are encouraged to learn more about these original occupants and those indigenous to other places we have lived. You may consider using the Native Land app and/or websites such as sni.org to learn more about the community of more than 7,000 enrolled Indigenous Peoples.

Academic Support Services. The campus provides a range of support services to help students thrive in their classes. These services include:

- Tutoring, both drop-in and by-appointment, with student tutors in the [Writing Learning Center](#), the [Math Learning Center](#), and a range of department-based tutoring centers
- Online tutoring through the [SUNY-wide STAR-NY system](#)
- [Supplemental Instruction](#), in which trained student assistants review lecture material from specific classes

Effective writing requires feedback from real human readers. The Writing Center is a free service for students of any level, in any discipline, and at any stage in the writing process. Highly-trained peer consultants will meet with you to discuss any stage of the writing process—brainstorming, organizing your essay, refining your argument, identifying patterns of error, etc. The Writing Center accepts walk-ins, but we encourage you to make an appointment [here](#).

Information on times and locations is available through the [Campus Learning Centers website](#).

The Navigate Student App is the student-facing platform that offers a wide range of resources including study buddies, to do's & events, and more. You can download the Navigate Student App at the Apple or

Google Play app store. You can also find the Navigate Student content on your computer: geneseo.navigate.eab.com.

We have leveraged SUNY Transformation funds to license CircleIn, a tool to facilitate peer learning. [CircleIn utilizes gamification](#) to incentivize students to better study habits. The development of the CircleIn platform was supported by NSF funding, and research evidence suggests that CircleIn is an effective tool for making academic success more attainable, common, and inclusive. The tool is free for all of our students, and CircleIn provides any tech support needed. You can download the CircleIn App at the Apple or Google Play app store. You can also find CircleIn in your Brightspace page.

Additionally, the college offers peer mentoring programs that are designed to reinforce good academic habits. These include:

- [Academic Peer Mentors in the Office of Advising](#) provide students with promising study strategies and can host on-going appointments with students seeking an "accountability buddy".
- The Leadership in Academic Success workshop series sponsored by the GOLD Leadership Program introduces students to a variety of study skills, time management techniques, and instruction on how to access campus resources for academic and career guidance. A [full list of GOLD workshops](#) can be accessed online.

Accessibility. SUNY Geneseo is dedicated to providing an equitable and inclusive educational experience for all students. The Office of Accessibility (OAS) will coordinate reasonable accommodations for persons with disabilities to ensure equal access to academic programs, activities, and services at Geneseo.

Students with approved accommodations may submit a [semester request](#) to renew their academic accommodations. More information on the process for [requesting academic accommodations](#) is on the OAS website. Questions? Contact the OAS by email, phone, or in-person: [Office of Accessibility Services](#), Erwin Hall 22, 585-245-5112, access@geneseo.edu.

Roles & Responsibilities.

Student: inform the instructor no later than the first week of the semester of any accommodation(s) you will or may potentially require. If additional accommodation needs arise during the semester, reach out promptly.

Instructor: maintain strict confidentiality of any student's disability and accommodations; support all students to meet the learning objectives of this course.

All course materials are available on Brightspace and in our in-person classes, and I've made every attempt to ensure that they are accessible to everyone. If you have difficulties accessing any materials (including needs for alternative formats), please let me know as soon as possible and I will rectify the situation.

Library Research Help. SUNY Geneseo's Library has an award-winning staff trained in finding the best information using library resources and advanced search strategies. Students may ask questions about using library services, locating materials, or conducting research projects. There is a librarian who specializes in the subject matter for each major. Students can book a research help meeting during the librarians' office hours or [email their questions](#). Learn more at the [Library's website](#).

Academic Integrity and Plagiarism. The library offers workshops to help students understand how to paraphrase, quote, and cite outside sources properly. With your Topic Proposal submission, you'll be asked to complete the Avoiding Plagiarism Tutorial on Brightspace to help clarify expectations. [Access the](#)

[Plagiarism Tutorial using this link](#). This online course is meant to educate about the importance of using original ideas and language, and how to incorporate paraphrases and quotes into writing. The complete list of library workshops can be found at www.geneseo.edu/library/library-workshops.

Academic dishonesty includes cheating, knowingly providing false information, plagiarizing, and any other form of academic misrepresentation, including self-plagiarism. Academic dishonesty will not be tolerated in this course. Plagiarism will result in a zero for the assignment and reporting to the college and could be grounds for an E course grade. College policies and procedures regarding academic dishonesty are available at www.geneseo.edu/handbook/academic-dishonesty-policy.

I take plagiarism and other forms of academic dishonesty seriously. At its most basic, academic honesty means you are responsible for doing your own work. You may not reuse work from other classes, use the work of another person, plagiarize, or use artificial intelligence to help with or generate assignments. I enforce Geneseo's plagiarism policy. You can find more information about the policy here: [Geneseo's Academic Dishonesty Policy](#).

Unintentional plagiarism. While the first thing most people think of when they hear the word plagiarism is cheating, you can plagiarize without intending to. Some students plagiarize because they have trouble with paraphrasing or fail to give credit to their sources of information, especially when they search online instead of utilizing assigned material. I believe this class will help you develop and/or strengthen the skills you need to avoid unintentional plagiarism. I am happy to help you if you have questions or are struggling with this. Come talk to me during office hours or by appointment if you have questions or want help. *Ultimately, you are responsible for avoiding plagiarism, but there are many resources and ways to get help.*

AI, like Chat-GPT. Because writing is one of the most important tools that we have for actively *thinking* in science, the use of AI tools to produce writing for this course is prohibited and assignments with AI-generated text will not receive credit. You must do your own work, which means that you should not utilize tools like Chat-GPT for any aspect of our course work. Such use is a form of academic dishonesty. Use of such tools is not only cheating, it will also cheat you of the opportunity to learn and develop your own skills. While AI will undoubtedly play important roles in our future society, you will be better able to utilize AI if you have developed your own critical thinking, writing, and analytical skills by doing your own work. If you have any questions about this, please ask.

Show your work. Upon request, I expect you to be able to show your work or process for completing assignments. This means, you should keep notes, brainstorming sheets, drafts, outlines, and any other work that you created in the process of writing a paper or completing an assignment.

Student Course Experience (SCE) Survey. During the last two weeks of the semester, students are invited and encouraged to complete a four-item course experience survey through MyGeneseo. Responses are completely anonymous at all times, and the results are only shared with instructors after final grades have been submitted. Instructors use the feedback to improve their courses in the future, and results from the SCE surveys are included in faculty portfolios used in renewal, tenure and promotion decisions. To participate: In a web browser, visit MyGeneseo. Select Surveys, then SCE Surveys. You are welcome to submit responses for each course listed.

Technology Support. [CIT provides a range of technology support resources](#). For assistance with your computer or mobile device, visit the CIT HelpDesk in Milne Library. Geneseo students, faculty and staff have free access to the entire [LinkedIn Learning training library](#) (over 7,500 courses, including tutorials for software, digital tools, web development, programming, and design) through Geneseo's site license.

Getting Help with Navigating Brightspace. CIT has developed a number of resources that can help you learn how to use our new learning management system, Brightspace. All students are automatically enrolled in ["Geneseo's Introduction to Brightspace for Students" course](#), a course intended to introduce learners to Brightspace and review its basic functionality. Following successful completion of this course, learners will receive a digital certificate of completion that can be provided to faculty members, upon request. There is also the [Student Guide for Brightspace at Geneseo](#) self-help article, which includes links to video tutorials for common tasks. For *technical assistance* with Brightspace, please [email the Brightspace Support Team](#). For questions about a course and its content, please contact the instructor directly.

Religious Observations and Class Attendance. New York State Education Law 224-a stipulates that "any student in an institution of higher education who is unable, because of [their] religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements" (see [General Classroom Policies for more information](#)). SUNY Geneseo has a commitment to inclusion and belonging, and I want to stress my respect for the diverse identities and faith traditions of students in my class. If you anticipate an absence due to religious observations, please contact me as soon as possible in advance to discuss your needs and arrange make-up plans. The New York State Department of Civil Service maintains a [calendar of major religious observations](#).

Military Obligations and Class Attendance. Federal and New York State law requires institutions of higher education to provide an excused leave of absence from classes without penalty to students enrolled in the National Guard or armed forces reserves who are called to active duty. If you are called to active military duty and need to miss classes, please let me know and consult as soon as possible with the Dean of Students.

Guidelines for Attendance and Public Health. As we continue to deal with variants of the COVID-19 virus and other contagious respiratory illnesses, I share these expectations for classroom attendance and protecting public health. SUNY Geneseo is a residential liberal arts college where we all learn together in a shared space. This classroom community is vital for engaging in discussions, solving problems, and answering questions together. Learning is an active process, and it requires engagement - on my part and yours. I promise to create an interactive and collaborative classroom space, and in return I expect you to attend and engage in the activities when safe for you to do so. To protect one another, if you are sick, please do not come to class. If your symptoms do not allow you to attend class, stay home (except to go to the health center), rest, and take care of yourself. You can find more [guidelines from the Center for Disease Control](#) for precautions when sick which cover flu, COVID and other illnesses.

I expect you to communicate with me directly about your absences. I can support you to keep up with class if you are out for an illness, but I need you to take responsibility for being transparent and clear in letting me know when you are out and why. Although I can work with you on keeping up, you may miss some course content and extended absences may impact your ability to realize your full potential in this class. For extended absences (more than a couple of days of classes), you should contact the Dean of Students who can assist with reaching out to your faculty.

Bias-Related Incidents.

We are here to listen, to learn, to teach, to debate, to change, to grow. We should all be safe to pursue these goals at SUNY Geneseo while being who we are. Together, we commit ourselves to pluralism, cultivating a community that respects difference and promotes a sense of inclusion and belonging.

As this excerpt from our Community Commitment to Diversity, Equity, and Inclusion states, here at SUNY Geneseo, we want to provide a space where everyone feels welcome to learn and grow in their identities as well as in their role as students, faculty, and staff. If in the unfortunate instance you witness or experience an incident of bias, we encourage you to reach out to the [Chief Diversity Officer](#), [Director of Multicultural Affairs](#), and/or our University Police Department. You may also choose to report it through the [bias-related incident reporting form](#). In trying to create an environment that facilitates growth through diverse thoughts and ideas, reporting incidents of bias - including threats, vandalism, and microaggressive behaviors - can help bring a better understanding of our campus climate as well as provide opportunities for learning and restoring harm. Hateful speech or actions will not be ignored in our class.

Everyone has the right to be addressed by the name and pronouns that correspond to their gender identity, including non-binary pronouns, for example: they/them/theirs, etc. Rosters do not list gender or pronouns so you may be asked if you would like to voluntarily indicate the pronouns you use so that I don't make assumptions based on your name and/or appearance/self-presentation (you are not obligated to do so). If you use a chosen name other than what is in MyGeneseo, please let me know. To change your first name in rosters, email, and Brightspace, follow these instructions: <https://www.geneseo.edu/handbook/process-to-change-your-first-name>. Chosen names and pronouns are to be respected at all times in the classroom. Mistakes in addressing one another may happen, so I encourage an environment of openness to correction and learning. We will not however, tolerate repeated comments which disrespect or antagonize students who have indicated pronouns or a chosen name. Chosen name and personal pronouns may evolve over time, so if at any point during our time together you would like to be addressed differently, please let me know.

All-Gender Restroom Access. The nearest all-gender restroom to our classroom and lab is ISC 116.

Student Well-Being is a priority in this class, to support the achievement of academic goals and alleviate stress. Prioritizing well-being can support the achievement of academic goals and alleviate stress. Eating nutritious foods, getting enough sleep, exercising, avoiding drugs and alcohol, maintaining healthy relationships, and building in time to relax all help promote a healthy lifestyle and general well-being. Your health and wellbeing are foundational to your ability to learn, and if you find that you are feeling unwell (physically or mentally) and it is impacting your ability to complete your coursework, please reach out. In a similar way, I will occasionally ask for some patience and flexibility on your part.

To foster a sense of belonging and connection, a state of financial, mental, emotional and physical stability must be achieved. If you are facing food insecurity, displacement, an emergency, crisis, or health-related or medical expense, you are not alone. Concerns about academic performance, health situations, family health and wellness (including the loss of a loved one), interpersonal relationships and commitments, and other factors can contribute to stress. Students are strongly encouraged to communicate their needs to faculty and staff and seek support if they are experiencing unmanageable stress or are having difficulties with daily functioning. The Dean of Students (585-245-5706) can assist and provide direction to [appropriate campus resources](#). For more information, visit the [Dean of Students Office website](#).

Mental Health Resources. We experience a range of challenges that can impact mental health and thus impact learning; common examples include increased anxiety, shifts in mood, strained relationships, difficulties related to substance use, trouble concentrating, and lack of motivation, among many others. These experiences may reduce your ability to participate fully in daily activities and affect your academic performance. If you or a friend are feeling suicidal, are in mental health crisis, or need someone to talk to, call or text 988. This lifeline provides 24/7, confidential support to people in mental-health related distress.

SUNY Geneseo offers free, confidential counseling for students through Student Health and Counseling, and seeking support for your mental health can be key to your success at college. You can learn more about the [various mental health services available on campus online](#). To request a counseling appointment, please [complete the online form](#).

Parents. Students who are parenting will be supported in this class. I ask that all students work with me to create a welcoming environment that is respectful to all forms of diversity, including diversity in parenting status. All exclusively breastfeeding and early infancy babies are welcome in our class sessions as often as is necessary. For older children and babies, I understand that unforeseen disruptions in childcare and pandemic-related changes often put parents in the position of having to miss class to care for a child. While not a long-term childcare solution, occasionally bringing a child to class to cover gaps in childcare is perfectly acceptable. If babies and children come to class, I ask that you be mindful to avoid disrupting learning for other students. For safety, babies and children are never allowed in the laboratory. Finally, I understand that often the largest barrier to completing your coursework as a parent is the tiredness many parents feel. While I maintain the same high expectations for all students in my classes regardless of parenting status, I am happy to problem-solve with you in a way that makes you feel supported as you strive for school-parenting balance.

Food Security for SUNY Geneseo Students. There are resources available for students who are food insecure. If you're unfamiliar with the phrase "food insecurity," you can learn more at the following link on Feeding America's website: [Understanding Food Insecurity](#). [The Pantry at Geneseo](#), our on-campus food pantry, works in partnership with the Geneseo-Groveland Emergency Food Pantry (GGEFP) and is facilitated by interns and volunteers working out of the Office of Student Volunteerism and Community Engagement as well as the School of Business, and the GOLD Leadership and Student Athlete Mentors programs. Any student who is food insecure [can submit a request here](#), to receive a bag of food that will provide them with items that will last a few days, including nonperishables and when available fresh fruits, vegetables, meat, and dairy. Once submitted, interns will connect directly with the student to communicate next steps and the time of your pick up. Pickups will take place in the MacVittie College Union, Room 114 - the GOLD Leadership Center. This program will provide individuals with a bag of food up to once a month. We will do our utmost to ensure anonymity, while also working to destigmatize food insecurity in our community. Students are also able to access the [Geneseo-Groveland Emergency Food Pantry](#) on their own if that is their preference. It is located at 31 Center St. and is open Tuesdays and Thursdays 10 AM - 2 PM and Wednesdays 4 - 6:30 PM. If you have any questions about this process or anything relating to food insecurity, or have a need beyond what is outlined above, please refer to our website or contact us [directly by email](#) or phone at 585-245-5893 or the Dean of Students at 585-245-5706.

Emergency Funding. The college has three sources of emergency funding for students experiencing short-term financial crises. The [Camiolo Student Emergency Loan Fund \(SELF\)](#) provides short-term loans to students for situations both temporary and beyond their control. The SELF was established with the expectation that students who use the fund seek to "pay it forward" as soon as they are able by contributing to the fund so other students can be helped, too. While there is not a legal obligation, the donors hope that student loan recipients respect and honor the value of community and helping others in their time of crisis. The [One Knight Student Aid Emergency Fund](#) assists Geneseo students who are facing financial emergencies mainly related to the COVID-19 pandemic. The fund offers grants (one-time award) depending on a student's documented financial need. For those students expecting a refund from financial aid, a Temple Hill loan of up to \$500 can be offered prior to the approved loan dispersal. If you are experiencing financial hardship, please contact the Dean of Students (585-245-5706), who can assist and provide direction to appropriate campus resources.

US Election Day. Tuesday, November 4th is Election Day in the US. Visit [vote.gov](https://www.vote.gov) to register and for further information.

Diversity and Equity. It is my intent to create a learning environment that supports all students. I believe the diversity that you bring to this class should be viewed as a resource, strength, and benefit. I strive to present materials and activities that are respectful of gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture. Your suggestions are encouraged to improve the course's effectiveness personally, or for others. I recognize that this feedback may not be easy to give. I will listen to feedback in whatever form it is given and work to be mindful of my own power and privilege. For ideas, questions, or concerns related to diversity, equity, and inclusion in the Biology Department, please reach out to bio-diversity@geneseo.edu.

BIOL 457: MARINE BIOLOGY

SCHEDULE

Week 1: Our Blue Planet

Aug. 25	Welcome to Marine Biology	<i>Ch. 1: 1–11</i>
Aug. 27	The Oceans	<i>Ch. 2: 12–23</i>
Aug. 27	<u>Lab 1</u> : Our Blue Planet	
Aug. 29	Properties of Seawater	<i>Ch. 2: 24–32</i>
	Due: Check In 1	

Week 2: Oceanography

Sept. 1	<i>Labor Day, No Classes</i>	
Sept. 3	Currents, Waves, & Tides	
	Due: Sign up for your Journal Club Discussion Date	
Sept. 3	<u>Lab 2</u> : Thermohaline Circulation	
	Due: Lab 1 Activity	
Sept. 5	A Brief History of Marine Biology	
	Due: <u>Article Response</u> Peoples et al. 2024 Algae-Eating Isopod	

Week 3: Marine Research

Sept. 8	Methods of Marine Research	<i>Ch. 4: 53–65</i>
Sept. 10	Marine Ecology	<i>Ch. 4: 65–80</i>
Sept. 10	<u>Lab 3</u> : Oceanography in R	
	Due: Lab 2 Activity	
Sept. 12	Productivity & Food Webs	<i>Ch. 12: 251–267</i>
	Due: <u>Article Response</u> Patek 2019 Mantis Shrimp Strike Biomechanics	

Week 4: Changing Oceans

Sept. 15	Climate Change	<i>IPCC Report for Policy Makers</i>
Sept. 17	Changing Oceans	<i>Ch. 3: 33–51</i>
Sept. 17	<u>Lab 4</u> : Marine Biodiversity	
	Due: Lab 3 Activity	
Sept. 19	Discussion: Climate Change & Ecoanxiety	<i>Johnson 2024 Chapter</i>
	<i>Bring Climate Action Example to Class Discussion</i>	
	Due: Topic Presentation Proposal, Avoiding Plagiarism Tutorial	

Week 5: Marine Organisms

Sept. 22	Marine Microbes	<i>Ch. 8: 155–159, Ch. 13: 268–270</i>
Sept. 24	Marine Zooplankton	<i>Ch. 8: 159–168</i>
Sept. 24	<u>Lab 5</u> : Introduction to Our Class Research Projects	
	Due: Lab 4 Activity	
Sept. 26	Marine Invertebrates	<i>Ch. 9: 169–171; Ch. 14: 279–309</i>
	Due: Check In 2, <u>Article Response</u> Amon et al. 2016 Polymetallic nodules	

Week 6: Marine Organisms

Sept. 29	Marine Fishes	<i>Ch. 9: 171–180</i>
Oct. 1	Mammals, Birds, & Reptiles	<i>Ch. 9: 181–198</i>
Oct. 1	<u>Lab 6</u> : Research Projects	
Oct. 3	Asynchronous: Benthic Ecology	<i>Ch. 15: 310–331</i>
	Online Lecture & Activity due by 11:59 pm	

Week 7: Marine Habitats

Oct. 6	Pelagic Ecology	<i>Ch. 10: 199–222</i>
Oct. 8	Mid-Term Exam	
Oct. 8	<u>Lab 7</u> : Research Projects	
Oct. 10	Coral Reefs	<i>Ch. 17: 396–425</i>

Week 8: Marine Habitats

Oct. 13	<i>Fall Break, No Classes</i>	
Oct. 15	The Intertidal, <i>Mid-Term Evaluation</i>	<i>Ch. 16: 332–378</i>
Oct. 15	<u>Lab 8</u> : Research Projects	
Oct. 17	Seagrasses, Kelp Forests, Mangroves	<i>Ch. 16: 364–368; Ch. 17: 379–395</i>
	Due: Topic Presentation Outline & Draft Slides	

Week 9: Marine Habitats

Oct. 20	The Deep Sea	<i>Ch. 18: 426–451</i>
Oct. 22	Polar Seas	<i>Ch. 19: 452–462</i>
	Due: Check In 3	
Oct. 22	<u>Lab 9</u> : Research Projects	
Oct. 24	Careers in Marine Biology	

Week 10: Topic Presentations

Oct. 27	Topic Presentations, Due: All Slides Due by 8 am	
Oct. 29	Topic Presentations	
Oct. 29	<u>Lab 10</u> : Research Projects	
Oct. 31	Topic Presentations	

Week 11: Marine Life Cycles

Nov. 3	Reproduction in the Ocean	<i>Ch. 7: 117–134</i>
Nov. 5	Life History & Growth	<i>Ch. 7: 134–153</i>
Nov. 5	<u>Lab 11</u> : Research Projects	
Nov. 7	Movement of Marine Organisms	<i>Ch. 10: 209–211</i>
	Optional: Human Impacts Project Topic & Source Check	

Week 12: Human Impacts on Marine Ecosystems

Nov. 10	Human Impacts on the Marine Environment	<i>Ch. 22: 523–547</i>
	Due: Check In 4	
Nov. 12	Marine Biodiversity	<i>Ch. 20: 463–488</i>
Nov. 12	<u>Lab 12</u> : Research Projects	
	Due: Research Project Contribution Reflection	
Nov. 14	Marine Conservation	<i>Ch. 21: 489–522</i>
	Due: <u>Article Response</u> McKnight et al. 2025 Oxygen and Seal Diving	

Week 13: Marine Physiology

Nov. 17	Salinity & Oxygen	<i>Ch. 5: 94–99</i>
Nov. 19	Temperature & Pressure	<i>Ch. 5: 81–94</i>
Nov. 19	<u>Lab 13</u> : Our Research Papers: Writing Workshop	
	Due: Research Project Figure	
Nov. 21	Light & Vision	<i>Ch. 5: 100–103</i>
	Due: Check In 5	

Week 14: Review & Check-In

Nov. 24	Preparing for Our Final: Review Activity	
	Due: Human Impacts Project	
Nov. 26–28	<i>Thanksgiving Break, No Classes</i>	

Week 15: Life in a Fluid Medium

Dec. 1	Fluid Dynamics & Marine Organisms	<i>Ch. 6: 105–115</i>
Dec. 3	Sound in the Sea	
Dec. 3	<u>Lab 14</u> : Wrap-Up on Research Projects	
	Due: Lab Research Paper	
Dec. 5	Life in a Fluid Medium	

Week 16: Putting it Together

Dec. 8	Putting it Together: Final Review	
Dec. 16	Final Exam, 8:00 – 11:20 am	