BIOL 317 SUNY GENESEO FALL 2022

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*

Lab

Wednesday	1:30 – 3:20 pm	*ISC 203*

Instructor. Dr. Mackenzie Gerringer ISC 255 gerringer@geneseo.edu

Office Hours. Mon. 10:30 –11:30 am; Wed. 10:30 – 11:30 am, 3:30 – 4:30 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! Office hours will be held in ISC 239. Please email me (gerringer@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 reading and critiquing scientific journal articles.
- Engage in critical thinking and discussions 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.

Course Materials.

Textbook: *Marine Biology: Function, Biodiversity, Ecology*. Jeffrey Levinton, 6th Edition, 2021. There are two copies of the textbook available for your use in the library's course reserves. 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 apply to the 6th edition of this text.

Scientific Papers. We will also explore primary research in marine biology. These readings are available on Canvas. 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 Canvas 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 Canvas.

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 Canvas. Submit any participation make-up assignments to Canvas within one week of your absence. 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 Canvas 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 <u>three of these</u>, write a short response on the worksheet provided *(10 points each)*. For <u>one other article</u>, 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 article response interview at least one week in advance.

Nonaka *et al.* 2021 Blackwater Diving for Larval Fishes Sept. 9th

Connell 1972	Rocky Intertidal Communities	Sept. 16th
Choy *et al.* 2019	Pelagic Systems & Microplastics	Oct 14th
Bennett *et al.* 2021	Conservation Equity	Nov. 18th

Topic Presentation *15% of course grade*

Prepare a talk on a topic in marine biology that excites you. Submit a topic proposal *(10 points)* and a presentation outline and draft slides *(10 points)* for feedback. Talks will be given in class, 10/31–11/4 *(25 points)*. Slides for all presenters are due to Canvas by 8 am on 10/31.

Topic Proposal	Sept. 23rd	*10 points*
Outline & Draft Slides	Oct. 21st	*10 points*
Topic Presentation	Oct. 31st	*25 points*

Human Impacts Poster *10% of course grade*

How will you share your marine science expertise beyond the classroom? Create an eye-catching, informative poster 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 cite three scientific sources, for pairs, use six sources *(30 points)*.

Optional Topic Check	Nov. 11th	
Human Impacts Poster	Nov. 21st	*30 points*

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. 7th	*5 points*
Lab Activity 2	Sept. 14th	*5 points*
Lab Activity 3	Sept. 21st	*5 points*
Lab Activity 4	Sept. 28th	*5 points*

For our remaining labs, we will conduct an 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. This is an opportunity for us to do real marine science together this semester.

Research Contribution	Nov. 16th	*10 points*
Research Figure	Nov. 30th	*10 points*
Lab Research Paper	Dec. 7th	*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, 15%.* The mid-term exam will be a written, closed book test held on Friday, October 7th (*40 pts*). *Final, 15%.* The final exam will be a closed-book, cumulative synthesis of our course material on Thursday, December 15th, 12:00–3:30 pm *(50 pts)*.

Mid-Term Exam	Oct. 7th	*40 points*
Final Exam	Dec. 15th	*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 Canvas discussions at least once each week.

Resources & Policies.

Course Policies. Late assignments and make-up assignments will be accepted only with extenuating circumstances, discussed in advance of the deadline. If you have an emergency or foresee a scheduling conflict on an assignment or exam, 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. Grade questions or review requests for assignments are only available 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. 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 Canvas 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/

Geneseo 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: https://www.geneseo.edu/about/mission-vision-and-values
- Community Commitment to Diversity, Equity, and Inclusion: https://www.geneseo.edu/diversity/commitment
- Geneseo Learning Outcomes for Baccalaureate Education: https://www.geneseo.edu/provost/globe-geneseo-learning-outcomes-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 (https://www.geneseo.edu/english/writing_center), the Math Learning Center (https://www.geneseo.edu/math/mlc), and a range of department-based tutoring centers
- Online tutoring through the SUNY-wide STAR-NY system (www.starny.org/tutoring_schedule)
- Supplemental Instruction (https://www.geneseo.edu/supplemental-instruction), in which trained student assistants review lecture material from specific classes

Information on times and locations is available through the Campus Learning Centers website at https://www.geneseo.edu/academic-support-services.

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

- Academic Peer Mentors in the Office of Academic Planning and Advising provide students with promising study strategies and can host on-going appointments with students seeking an "accountability buddy". More information is available at https://www.geneseo.edu/dean_office/academic-peer-mentors-0.
- The ONYX 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 at https://www.geneseo.edu/gold/app/browse.

Library Research Help. Fraser Hall 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 to libraryhelp@geneseo.edu. Learn more at https://library.geneseo.edu/research-help.

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

Technology Support. CIT provides a range of technology support resources. When you are in Canvas, the Help menu on the left side of the screen will also direct you to a number of CIT supports, including self-help resources and options to request technology assistance. For assistance with your computer or mobile device, visit the CIT HelpDesk in Fraser. 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. For more information, visit this self-help document.

Accessibility. SUNY Geneseo is dedicated to providing an equitable and inclusive educational experience for all students. The Office of Accessibility will coordinate accommodations, auxiliary aids, and/or services designed to ensure full participation and equal access to all academic programs, activities, and services at SUNY Geneseo. Students with letters of accommodation should submit a letter to us and discuss needs at the beginning of the semester. Please contact the Office of

Accessibility Services in Erwin Hall 22, (585) 235-5112, access@geneseo.edu, www.geneseo.edu/accessibility-office for questions related to access and accommodations.

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.

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 Canvas 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.

Guidelines for Attendance and Public Health. As we continue to deal with variants of the COVID-19 virus well into the future, 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. Engaging in discussions and collaborative problem solving is vital to creating a classroom community. 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.

We know that COVID is shifting from a pandemic to endemic stage, and it's possible that some of you may get infected over the course of the semester. Because we want you to be successful and because we value your contribution to the course, we expect you to prioritize attendance when it is safe for you and our class for you to do so. If you are experiencing symptoms associated with COVID on a day we have class, please take a self-test. Examples of common symptoms include fever or chills, cough, difficulty breathing, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and/or diarrhea. You can order a free self-test now, so you have it when you need it. If you test negative and feel well enough to attend, put on a well-fitting mask, come to class, and maintain physical distance as much as possible. 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. 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 COVID-related reasons, 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 (i.e., more than a couple of days of classes), you should contact the Dean of Students who can assist with reaching out to your faculty. Finally, I want you to succeed and learn in this class, and I want to protect our community from COVID as best as I can.

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 https://www.geneseo.edu/apca/classroom-policies). 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 for 2022.

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.

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. In the unfortunate instance you experience an incident of bias, we encourage you to reach out to the Chief Diversity Officer (routenberg@geneseo.edu), Interim Director of Multicultural Affairs (nweathers@geneseo.edu), and/or our University Police Department. You can also contact the Biology Department's Diversity, Equity, and Inclusion Committee at bio-diversity@geneseo.edu. 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. Hateful speech or actions will not be tolerated 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 to 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 KnightWeb, please let me know. 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. I 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 the semester you would like to be addressed differently, please let me know.

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

Student Well-Being is a priority in this class, to 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. 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. Please feel free to reach out to me if you have questions or concerns. The Dean of Students (585-245-5706) can also assist and provide direction to appropriate campus resources. For more information, see www.geneseo.edu/dean_students.

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.

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 www.geneseo.edu/health. To request a counseling appointment, please complete the online form through myhealth.geneseo.edu.

Health and Well-Being in a Stressful Time. The changes brought on by COVID-19 have impacted us all in a number of ways and will continue to do so at various times and to varying degrees during the upcoming semester. 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. Please remember that it's never too late to ask for help. The Dean of Students (585-245-5706) can assist and provide direction to appropriate campus resources. The college also has collected resources in a Coping with COVID webpage.

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 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. Finally, I understand that often the largest barrier to completing your coursework as a parent is the tiredness many parents feel in the evening once children have gone to sleep. 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 (https://hungerandhealth.feedingamerica.org/understand-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: Food Pantry Request Form (https://docs.google.com/forms/d/e/1FAIpQLSfFL6Vrdsv5kxTLd6yK_mXOL8NGeZtv5x8mzYAhHyiRJepLxA/viewform?usp=sf_link) 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 (https://ggefoodpantry.org/) 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 at foodpantry@geneseo.edu / 585-245-5893 or the Dean of Students at 585-245-5706.

US Election Day. Tuesday, November 8th is Election Day in the US. Visit vote.gov to register and for further information.

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.

Accessing Feedback on Canvas. Feedback will be provided through Canvas, in the form of general comments, rubrics, and through specific comments on the documents themselves. Access specific comments by following the 'View Feedback' link. Here is a video detailing this process: https://www.youtube.com/watch?v=Jcl1NOUFYf8&ab_channel=RichardRafferty

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 want to present materials and activities that are respectful of identity across gender, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture. Your suggestions are encouraged to improve the course's effectiveness and inclusivity, for you personally or for other students or student groups. 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 317: MARINE BIOLOGY

SCHEDULE

Week 1: Our Blue Planet

Aug. 29	Welcome to Marine Biology	*Ch. 1: 1–11*
Aug. 31	The Oceans	*Ch. 2: 12–23*
Aug. 31	Lab 1: Our Blue Planet	
Sept. 2	Properties of Seawater	*Ch. 2: 24–32*

Week 2: Oceanography

Sept. 5	*Labor Day, No Classes*	
Sept. 7	Currents, Waves, & Tides	
Sept. 7	Lab 2: Thermohaline Circulation	
	Due: Lab 1 Activity	
Sept. 9	A Brief History of Marine Biology	
	Due: Article Response Nonaka *et al.* 2021 Blackwater Diving	

Week 3: Marine Research

Sept. 12	Methods of Marine Research	*Ch. 4: 53–65*
Sept. 14	Marine Ecology	*Ch. 4: 65–80*
Sept. 14	Lab 3: Oceanography in R	
	Due: Lab 2 Activity	
Sept. 16	Productivity & Food Webs	*Ch. 12: 251–267*
	Due: Article Response Connell 1972 Intertidal Communities	

Week 4: Changing Oceans

Sept. 19	Climate Change	*IPCC Report for Policy Makers*
Sept. 21	Changing Oceans	*Ch. 3: 33–51*
Sept. 21	Lab 4: Marine Biodiversity	
	Due: Lab 3 Activity	

Sept. 23	Discussion: Climate Change & Ecoanxiety	
	Due: Topic Presentation Proposal, Avoiding Plagiarism Tutorial	

Week 5: Marine Organisms

Sept. 26	Marine Microbes	*Ch. 8: 155–159, Ch. 13: 268–270*
Sept. 28	Marine Zooplankton	*Ch. 8: 159–168*
Sept. 28	Lab 5: Introduction to Our Class Research Projects	
	Due: Lab 4 Activity	
Sept. 30	Marine Invertebrates	*Ch. 9: 169–171; Ch. 14: 279–309*

Week 6: Marine Organisms

Oct. 3	Marine Fishes	*Ch. 9: 171–180*
Oct. 5	Mammals, Birds, & Reptiles	*Ch. 9: 181–198*
Oct. 5	Lab 6: Research Projects	
Oct. 7	Mid-Term Exam	

Week 7: Marine Habitats

Oct. 10	*Fall Break, No Classes*	
Oct. 12	Benthic Ecology	*Ch. 15: 310–331*
Oct. 12	Lab 7: Research Projects	
Oct. 14	Pelagic Ecology	*Ch. 10: 199–222*
	Mid-Term Evaluations	
	Due: Article Response Choy *et al.* 2019 Pelagic Microplastics	

Week 8: Marine Habitats

Oct. 17	Coral Reefs	*Ch. 17: 396–425*
Oct. 19	The Intertidal	*Ch. 16: 332–378*
Oct. 19	Lab 8: Research Projects	
Oct. 21	Seagrasses, Kelp Forests, Mangroves	*Ch. 16: 364–368; Ch. 17: 379–395*
	Due: Topic Presentation Outline & Draft Slides	

Week 9: Marine Habitats

Oct. 24	The Deep Sea	*Ch. 18: 426–451*
Oct. 26	Polar Seas	*Ch. 19: 452–462*
Oct. 26	Lab 9: Research Projects	

Oct. 28	Careers in Marine Biology	

Week 10: Topic Presentations

Oct. 31	Topic Presentations	
	Due: All Slides Due by 8 am	
Nov. 2	Topic Presentations	
Nov. 2	Lab 11: Research Projects	
Nov. 4	Topic Presentations	

Week 11: Marine Life Cycles

Nov. 7	Reproduction in the Ocean	*Ch. 7: 117–134*
Nov. 9	Life History & Growth	*Ch. 7: 134–153*
Nov. 9	Lab 12: Research Projects	
Nov. 11	Movement of Marine Organisms	*Ch. 10: 209–211*
	Optional: Human Impacts Poster Topic & Source Check	

Week 12: Human Impacts on Marine Ecosystems

Nov. 14	Human Impacts on the Marine Environment	*Ch. 22: 523–547*
Nov. 16	Marine Biodiversity	*Ch. 20: 463–488*
Nov. 16	Lab 13: Research Projects	
	Due: Research Project Contribution Reflection	
Nov. 18	Marine Conservation	*Ch. 21: 489–522*
	Due: Article Response Bennett *et al.* 2021 Conservation Equity	

Week 13: Review & Check-In

Nov. 21	Review & Check-In	
	Due: Human Impacts Posters	
Nov. 23–25	*Thanksgiving Break, No Classes*	

Week 14: Marine Physiology

Nov. 28	Salinity & Oxygen	*Ch. 5: 94–99*
Nov. 30	Temperature & Pressure	*Ch. 5: 81–94*
Nov. 30	Lab 14: Our Research Papers: Writing Workshop	
	Due: Research Project Figure	
Dec. 2	Light & Vision	*Ch. 5: 100–103*

Week 15: Life in a Fluid Medium

Dec. 5	Fluid Dynamics & Marine Organisms	*Ch. 6: 105–115*
Dec. 7	Life in a Fluid Medium	
Dec. 7	Lab 14: Wrap-Up on Research Projects	
	Due: Lab Research Paper	
Dec. 9	Sound in the Sea	

Week 16: Putting it Together

Dec. 12	Putting it Together: Final Review
Dec. 15	Final Exam, 12 – 3:20 pm