



Marine Environmental Science: ENV 115

Lecture Syllabus

Spring 2025

How inappropriate to call this planet Earth when it is quite clearly Ocean.

[Arthur C. Clarke](#)

There's nothing wrong with enjoying looking at the surface of the ocean itself, except that when you finally see what goes on underwater, you realize that you've been missing the whole point of the ocean. Staying on the surface all the time is like going to the circus and staring at the outside of the tent.

Dave Barry

It is said by the Eldar that in water there lives yet the echo of the Music of the Ainur more than in any substance that is in this Earth; and many of the Children of Ilúvatar hearken still unsated to the voices of the Sea, and yet know not for what they listen.

[J.R.R. Tolkien, *The Silmarillion*](#)

For most of history, man has had to fight nature to survive; in this century he is beginning to realize that, in order to survive, he must protect it.

[Jacques-Yves Cousteau](#)

The scientific community is no private club. In principle, and in its best and broadest sense of the words, scientific inquiry can be undertaken by anyone on almost any subject matter.

W. Quine and J. Ullian

Department Name: Environmental Program

College/School/Division Name: Natural Sciences and Mathematics; Chaminade University of Honolulu

Course Credits: 3

Term: Spring 2025 **Class Meeting Days:** MWF **Class Meeting Hours:** 1:30-2:20 **Class Location:** WSC120

Instructor: Dr. Gail Grabowsky

E-mail address: ggrabows@chaminade.edu

Phone: 735-4834 (ext. 834 if calling from on campus); cell 808-387-9319 (please don't call after 9:00 pm, but you may text anytime!)

Office Location: Wesselkamper Science Center, room 105

Office hours: Tu/Th 2:00-5:30 PM; WF 3:00-5:30 PM; Or by appointment (Zoom or in person)

Course Website: [HERE](#)

University Course Catalog Description:

This course introduces students to the scientific causes and consequences of the current major marine environmental issues. Topics include: effects of climate change on ocean ecosystems, marine pollution, marine debris, oil spills, overexploitation, by-catch, invasive species and coral reef degradation. The course focuses on making students aware of the material causes and consequences of each issue as well as the role of science in devising sustainable solutions to each issue. Course must be taken concurrently with ENV 115L.

Marianist Values:

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

Native Hawaiian Values:

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the 'Ōlelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Ōlelo No'eau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 1957) Acquire skill and make it deep
3. Educate in Family Spirit ('Ohana) 'Ike aku, 'ike mai, kōkua aku kōkua mai; pela iho la ka nohana 'ohana ('Ōlelo No'eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no'eau ('Ōlelo No'eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) All knowledge is not taught in the same school

What this course counts for:

This course counts for your Quantitative Reasoning requirement for your General Education program. It is also a course that many of our Environmental Studies, Environmental Science and Biology majors like to take for its content and because it prepares them for Advanced Marine Science.

Student Learning Outcomes for this particular course:

At the end of this course students will be able to:

- ◆ Describe what science is and how scientific research is conducted
- ◆ Summarize the basic concepts in oceanography and marine biology
- ◆ Label the characteristics of the major marine zones
- ◆ Identify the names and ecological roles of a number of marine organisms that occur in Hawaiian waters
- ◆ Explain the physical causes of each of the major marine environmental issues
- ◆ Diagram the causal network of events that lead to the occurrence of each issue
- ◆ Inventory the actual and projected physical consequences of each issue
- ◆ Analyze and interpret data about our oceans and ocean issues.
- ◆ Distinguish the detrimental effect(s) of each issue on marine ecosystems and human welfare
- ◆ Compare some of the specific mechanisms diverse indigenous people of the Pacific employ(ed) in gathering ocean resources that may be considered sustainable practices
- ◆ Apply the connections between academic work and real-life situations

Texts:

Required: You should purchase this textbook.

Castro, P. & M. E. Huber. Marine Biology. 12th Edition. McGraw Hill. 2023. [ISBN: [9781259880032](#)]

Supplemental Texts: A number of readings in this course will come from other documents and publications. I will provide you e-copies and bibliographies/references through Google Drive.

Course Website (Everything you need is [HERE](#)! Canvas provides important links to this Google Drive folder!):

Grading & Assessment: Your grade in this course will be based on the following. Each of the items/activities listed below will be described to you in writing or orally in class.

Grading will be quantified as follows:

Two Lecture Exams	40% (200 points)
Final Exam	20% (100 points)
Marine Zone Presentation	20% (100 points)
Service Learning	20% (100 points)
(Extra Credit) Notable Marine Places Presentation	(+50 points possible if completed)
	500 points total

Letter grades are interpreted as follows:

- A = Outstanding scholarship and an unusual degree of intellectual initiative
- B = Superior work done in a consistent and intellectual manner
- C = Average grade indicating a competent grasp of subject matter
- D = Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
- F = Failed to grasp the minimum subject matter; no credit given

Grading Procedures:

Grades will be assigned to written exams using a curve with the mean score for the class being a B- and the score immediately below the mean being a C+. This will be explained in detail in class. The first two lecture exams will cover the material from the start of class up until the first exam and the material after the first exam up until the second exam, respectively. These exams will have a variety of types of questions on them. The final exam is cumulative, multiple choice and covers the lecture material for the entire semester. A review sheet will be handed out before every exam.

Marine Zone and Notable Marine Places and Issues Presentations:

These presentations will both count towards your lecture grade. The *Notable Places* presentation is optional! The particular protocols, requirements and grading criteria for each will be described in class and with a handout. The date of the presentations are indicated on the syllabus.

Attendance and you grade:

While I dearly hope that you can make every class..., since you are adults now, you are free to miss any *lecture* class you choose... but **KNOW** that there may be some consequences should you choose to exercise this option: your grade could (and most likely **WILL**) suffer. I believe that students who have missed a lot of classes **ALWAYS** would have done better if they had not missed classes. There simply is no substitute for being in class when it comes to understanding the material. I can give you a fishing pole, but I cannot make you fish.

If you miss a lecture exam or any lab meeting your absence must be excused if it is not to formally effect your grade. Excused absences occur when you bring in a doctor's note, a funeral announcement for a family member, notice of participation in athletic events, etc. Unexcused absences occur when you were working, surfing, sleeping, cramming for an exam in another class, etc. I am a scientist; I require hard evidence if an absence is to be excused. If your car breaks down on the way to an exam or lab take a picture and make SURE I can verify the date and time of the breakdown and it will be an excused absence, ☺, however, no evidence; no excused absence.

Service Learning Options: Google Service Learning Folder with everything in it is [HERE](#)!

You will need to participate in 15 hours of service-learning work throughout the semester that aims to help Hawaii and the Pacific islands achieve the [United Nations Sustainable Development Goals](#) (SDG) and are therefore officially tied to Chaminade's United Nations [CIFAL Honolulu](#) training center. This year you have FIVE opportunities to choose from. You can commit to just one of them or participate in all of them!



1. Helping out with **Chaminade's Pono Popoki Project**. [HERE](#) is the link to the Project Google Drive folder! Your contact person is **Dr. Gail**.

2. Helping out with our **Campus Mala Projects** = Helping out Community Engagement Specialist **Mitch Steffey**: mitchell.steffey@chaminade.edu by helping out with composting, gardening and native plant outplanting.



3. Helping count Manu-O-Ku (White Terns, *Gygus alba*) on campus. We do this at night when we can see these beautiful white birds, that are very important in Hawaiian culture, roosting in our trees. **We are led by Rich Downs**, Coordinator, [Hui Manu o Ku](#) and a Biologist for Pacific Rim Conservation.

4. **Shepherding a Hawaii State Bill:** (Helpful "how to" sheet [HERE](#)) There are MANY bills proposed by the Hawaii State Legislators that relate to this class! There are bills about water pollution, renewable energy, land use, endangered species, habitat protection, climate change, agriculture, environmental justice, ETC! Also, the legislature is using Zoom now! SO it is much easier to testify and follow a bill. You only have to follow ONE bill – and testify in person or in writing along the way. A great place for you to start to look for a bill is here: <https://www.capitol.hawaii.gov/>

5. **An activity of your own choosing that MUST synergize with our course content:** Make sure to let Dr. Gail know before about this activity. It will need to be approved first.

Extra Credit Options:

Periodically throughout the course there will be presentations, virtual talks, webinars, workshops, etc. that you may attend that pertain to the course material. You can earn +2 extra credit points towards a lecture exam for each one you attend with content related to the course content. In order for all talks and service activities to count for extra credit you MUST have them approved PRIOR TO the event and you MUST document your presence (if

Dr. Gail is not also in attendance) with a photograph of yourself participating or some other kind of evidence.
You may earn up to 10 extra credit points from attending talks/presentations/webinars/workshops/etc

How ENV 115 Meets the Credit Hour Policy:

There are three components to the amount of time students will spend in a course:

1. **Seat time:** 35 hours
2. **Time spent on key assignments:**
 - 2.1. Three exams: Exam I, Exam II and a cumulative Final Exam – 10 hours study time
minimum for each = $3 \times 10 = 30$ hours
 - 2.2. Research and prep for collaborative Marine Zone Presentation = 10 hours
 - 2.3. 30 pages of reading per week – 3 hours each $\times 15$ weeks = 45 hours
 - 2.4. 15 hours mandatory service project and reflections = 18 hours

TOTAL: 138 Hours

Classroom Atmosphere:

I value a very open, yet courteous class atmosphere. Express your ideas! Ask your questions! (The only dumb question is the one in which you ask yourself if you should ask your question.) Respect the thoughts and ideas and opinions of others – really think about what others say. Let them fully express their thoughts and ideas and then you do the same. **The thing I value most from my college days are all the wonderful, valuable, diverse ways of looking at and understanding the world that I was exposed to. Be an open vessel – take ideas in! You will learn as much from each other as you do from me.**

This syllabus and course schedule are living documents: they are free to change. I try to adhere as closely as possible to them for your convenience, but there will be times in which we will take longer on a particular topic or add or delete a topic to enhance the course. I like to be able to react to you as the course proceeds and go with the flow a bit in order to make the course experience sort of custom fit to you!

You are responsible for all of the information in this document: losing it or not reading it do not make you exempt from knowing what's in it!

Use your syllabus to keep you organized and aware of important dates and how your grade is determined.



Marine Environmental Science
Course Schedule
Spring 2025
Part I

Ocean Environments & Inhabitants

<u>WEEK OF</u>	<u>TOPIC</u>	<u>ACTIVITIES</u>
1/6 – 1/10	Course Intro; Marianist Values; Science	Chapter 1 in textbook
1/13 – 1/17	Science & Indigenous Knowledge; Marine Geology	Chapter 2 in the textbook
1/21 – 1/24	Special Properties of Water; Seawater Chemistry	Chapter 3 in the textbook
1/27 – 1/31	Oceanography	
2/3 – 2/7	Marine Biodiversity; Larvae	Chpts 4 & 6 in the textbook
2/10 – 2/14	Introduction to Ecology; Marine Ecosystems 2/10: Marine Zone Presentations	Chpts 7, 8 & 9 in the textbook
2/18 – 2/21	Ecology Wrap-Up & Review 2/21: Exam I	Chapter 10 in the textbook Exam I

Part II
Threats to Our Oceans

<u>WEEK OF</u>	<u>TOPIC</u>	<u>ACTIVITIES</u>
2/24 – 2/28	Coral Reef Threats	Chpt 12 & Outside Readings (provided)
3/3 – 3/7	Climate Change	Textbook Special Report (pp.237) & Outside Readings (provided)
3/10 – 3/14	Coastal Development; Marine Pollution	Chpt 18 & Outside Readings (provided)
3/17 – 3/21	S P R I N G B R E A K !	
3/24, 28	Non-point source pollution; Marine Debris	Outside Readings (provided)
3/31 – 4/4	Introduced Species	Outside Readings (provided)
4/7 – 4/11	Fisheries: Recreational Near Shore 4/11: Exam II	Outside Readings (provided) Exam II
4/14 – 4/16	Fisheries: Commercial; Aquaculture	Outside Readings (provided)
4/21 – 4/25	Issues Summary; Solutions to Marine Threats 4/23: (Optional) Notable Marine Places Presentations	Outside Readings (provided)

Important Dates You Should Know:

- **Final Exam:** (Cumulative and multiple choice!) **Week of 4/28-5/1 in our classroom, date and time TBA.**



Other official statements that apply to all courses at Chaminade:

Academic Honesty: Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, and plagiarism, in addition to more obvious dishonesty.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Dean of the Academic Division. Punishment for academic dishonesty will be determined by the instructor and the Dean of Academic Division and may include an “F” grade for the work in question, an “F” grade for the course, suspension, or dismissal from the University.

For the most up to date information, please refer to the [Academic Honesty Policy](#) on the Chaminade University Catalog website.

Title IX and Nondiscrimination Statement: Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator.

Nondiscrimination Policy & Notice of Nondiscrimination: Chaminade University of Honolulu does not discriminate on the basis of sex and prohibits sex discrimination in any education program or activity that it operates, as required by Title IX and its regulations, including in admission and employment. Inquiries about Title IX may be referred to the University’s Title IX Coordinator, the U.S. Department of Education’s Office for Civil Rights, or both and contact information may be found at the [Chaminade University Title IX Office Contact Information and Confidential Resources website](#). On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).

The University’s Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates. The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

CUH Alert Emergency Notification: To get the latest emergency communication from Chaminade University, students’ cell numbers will be connected to Chaminade’s emergency notification text system. When you log in to the Chaminade portal, you will be asked to provide some emergency contact information. If you provide a cellphone number, you will receive a text from our emergency notification system asking you to confirm your number. You must respond to that message to complete your registration and get emergency notifications on your phone.

Assessment for Student Work: With the goal of continuing to improve the quality of educational services offered to students, Chaminade University conducts assessments of student achievement of course, program, and institutional learning outcomes. Student work is used anonymously as the basis of these assessments, and the work you do in this course may be used in these assessment efforts.

Student with Disabilities Statement: Chaminade University of Honolulu offers accommodations for all actively enrolled students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (2008).

Students are responsible for contacting Kokua Ike: Center for Student Learning to schedule an appointment. Verification of their disability will be requested through appropriate documentation and once received it will take up to approximately 2–3 weeks to review them. Appropriate paperwork will be completed by the student before notification will be sent out to their instructors. Accommodation paperwork will not be automatically sent out to instructors each semester, as the student is responsible to notify Kokua Ike via email at ada@chaminade.edu each semester if changes or notifications are needed.

Kōkua ‘Ike: Tutoring & Learning Services: Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua ‘Ike: Center for Student Learning in a variety of subjects (including, but are not limited to biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check Kōkua ‘Ike’s website for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via TutorMe. Tutor Me can be accessed 24/7 from your Canvas account. Simply click on Account > TutorMe. For more information, please contact Kōkua ‘Ike at tutoring@chaminade.edu or 808-739-8305.