



Chaminade University

OF HONOLULU

Course Syllabus

[Chaminade University Honolulu](https://www.chaminade.edu)

3140 Waiālae Avenue - Honolulu, HI 96816

www.chaminade.edu

Course Number: ENV202/L

Course Title: Environmental Physics/Environmental Physics Laboratory

Department: Environmental Studies, Natural Sciences

Term: Spring 2024

Course Credits: 3/1

Lecture Meeting Days: Tuesday and Thursday

Lecture Meeting Hours: 4-5:20 pm

Lecture Location: Henry Hall, 203

Lab Meeting Days: Friday

Lab Meeting Hours: 2:30-5:20 pm

Lab Location: Henry Hall, Room L10

Instructor Name: Jerelyn Watanabe, Ed.D.

Email: jerelyn.watanabe@chaminade.edu

Office Hours: By appointment

University Course Catalog Description

ENV 202 Environmental Physics (3)

A detailed study of matter and energy in our environment and the transformations that they undergo.

Thermodynamics and the sources of energy; the uses of energy and the consequences of such uses. Particular emphasis on the environments of island ecosystems such as Hawaii. Cross-listed with PHY 111. Course must be taken concurrently with ENV 220L.

ENV 202L Environmental Physics Laboratory (1)

One three-hour laboratory period per week to accompany ENV 202. Students investigate matter and energy in our environment and the transformations that they undergo in order to learn firsthand the application of the relevant physical principles to environmental issues and sustainable solutions. Activities are conducted in the laboratory and in the field. Cross-listed with PHY 111L. Course must be taken concurrently with ENV 202.

Environmental Studies Program Mission Statement

Chaminade University is a Marianist Institution committed as an extension of Marianist values to producing local, state, national and international servant-leaders adept at the multidisciplinary acts of understanding, communicating, ameliorating and preserving or developing more harmonious interactions with the environment. The University's major in Environmental Studies produces skilled intellectual pre-professionals considerate of the spiritual, ethical, scientific, economic, political, legal, historical and cultural aspects of environmental issues. Students in the Environmental Studies Program benefit from a learning experience which prepares them for the real world through coursework, fieldwork, research, service and apprenticeship in the community.

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

Environmental Studies Program Objectives and Skills addressed by ENV 202 and 202L

Students graduating with a baccalaureate degree in Environmental Studies will:

Possess problem-solving skills from diverse disciplines for diverse populations

- Be familiar with the process of conflict resolution
- Know the difference between fact and opinion
- Take a balanced outlook
- Be aware of the perspectives and value systems of others
- Be able to arrive at creative solutions

Possess a solid scientific foundation

- Understand Earth Systems Science (Lab)
- Know the major material causes of environmental degradation (Lab)
- Know the benefits of recycling
- Be able to assess the veracity of information
- Have experience reading the primary scientific literature
- Be able to conduct research (Lab)
- Understand the role science plays in environmental problem-solving (Lab)

Know the roles and importance of laws, politics and economics in environmental issues

- Know the economic challenges of recycling

Possess good written and oral communication skills

- Be able to write a scientific research report (Lab)

Know the major environmental issues and their potential solutions

- Be familiar with some of the proposed solutions to each of the major global and local environmental issues

Required Learning Materials

Selected readings pdf/online including several chapters from:

The Blue Planet: An Introduction to Earth System Science, 3rd ed., by B. J. Skinner & B. W. Murck; John Wiley & Sons, 2011. ISBN: 9780470914021

Lab Notebook, Lab Coat, and covered shoes required.

Canvas Links:

[ENV202-01-1](#)

[ENV202L-01-1](#)

Technical Assistance for Canvas Users:

- Search for help on specific topics at help.instructure.com
- Contact the [Chaminade IT&S](mailto:helpdesk@chaminade.edu) for technical issues: helpdesk@chaminade.edu, or call (808) 735-4855

Assessment

Discussion Assignments

Initial Post: You will be asked to read article(s) and/or watch videos before writing a response of 100 - 200 words. I would like to hear your voice come through (rather than a summary of the information). You may also ask a question in your response. Your post will need to include at least one direct quote from an article with an in-text citation and full reference at the end of the post using APA Style (7th Edition).

Some questions to consider in your response are: What does this information in the article mean to me? Why is this important to know?

Discussion Assignments will be graded according to the Discussion Rubric.

Two Responses: Reply to at least two of your classmates with between 75-100 words by answering their question, adding one of your own, finding common ground, or areas of difference. The important part of your reply will be your explanation and connection to the response.

Discussion Assignments will be graded according to the Discussion Response Rubric.

Conceptual Physics Problem Sets, Labs, and Exams

Problem Sets - Due dates in Class TBA

Exams: TBA

Final Exam: TBA

Completing the physics problem sets and labs will be required for your success and is an extremely important way for you to communicate your understanding of physics concepts to me. Expect to be challenged and feel uncomfortable as you gain understanding, however, we will do most of this in class so that you will be supported by your instructor and your peers during the process.

Exams will consist of several written problems based on the assigned problem sets.

You may use a scientific or graphing calculator on problem sets and exams (but you won't need it).

Grading Scale

Letter grades are given in all courses except those conducted on a credit/no credit basis. Grades are calculated from the student's daily work, class participation, quizzes, tests, term papers, reports and the final examination.

They 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 the fulfillment of prerequisite course work

F Failed to grasp the minimum subject matter; no credit given

ENV 202 (3 credits)	ENV 202L (1 credit)
Problem Sets (in class) - 30% 90 points	Labs/Field Trip (in class) - 60% 60 points
Asynchronous Writing/Dialectical Journal - 25% 75 points	Research Project & Paper - 40% 40 points
2 Exams (in class) - 30% 90 points	
Final Exam - 15% 45 points	
Passing A: 90 – 100% (270-300 points) B: 80 – 89% (240-269 points) C: 70 – 79% (210-239 points) Not Passing D: 60 – 69% (180-209 points) F: below 60%	Passing Grades A: 90 – 100% (90-100 points) B: 80 – 89% (80-99 points) C: 70 – 79% (70-79 points) Not Passing D: 60 – 69% (60-69 points) F: below 60%

Advice for success

My hope is that you will consider yourself to be an active agent in designing and implementing creative solutions to environmental challenges that are important to you. Think of each experience, reading, lab, problem set, and discussion as a resource for developing these creative solutions.

*Again, you can't connect the dots looking forward; you can only connect them looking backward. So you have to **trust** that the dots will somehow connect in your future. Steve Jobs, Apple*

Engage with the readings through your discussion posts. I encourage you to talk with me and your peers about the ideas presented. Some may make more sense than others in terms of science, and you may have a strong emotional reaction to some of the topics. It's important to keep track of your questions and reactions because

they will help you understand yourself better. And the better you understand yourself, the better you are able to communicate and connect with others. This is essential when talking about important issues. To be an agent of change you will need to inspire others through your actions and communication.

Investigate the concepts of physics in class. It may be extremely difficult and uncomfortable, especially if you haven't had positive experiences with math and science in the past. We will do the physics in class where you will be supported by your peers and your instructor. You will choose the level of mathematics that you engage with in the activities without penalty.

Communicate with me – ask questions, share your understanding and frustrations, let me know what's going on in your life. I would like to know if there is anything that I can do to help you learn the physics that impacts your study and stewardship of the environment.

“Showing up is half the battle”

[*Adrianna Tan, CEO and Founder, Wobe*](#)

Please email or text me if you will be late or miss class. Your presence makes a huge difference to the class dynamic and we will all miss out when you are not in class.

Course Policies

Late Work and Extra Credit Policy

Late work and extra credit may be accepted at the instructor's discretion.

Grades of "Incomplete"

Incomplete grades may be assigned in accordance with Chaminade University policies

Instructor and Student Communication

Questions for this course can be emailed to the instructor at jerelyn.watanabe@chaminade.edu. Online, in-person, and phone conferences can be arranged. Response time will take place up to 48 hours.

Cell Phones, Tablets, and Laptops

Out of consideration for your classmates, please set your cell phone to silent mode during class. Students are encouraged to bring laptops or tablets to class as the instructor will assign online activities and readings that will require the use of a laptop or tablet. Laptops and tablets should not be misused, such as checking distracting websites. Use your best judgment and respect your classmates and instructor.

ADA Accommodations

Effective August 1, 2020, Kōkua 'Ike: Center for Student Learning (Kōkua 'Ike), a unit within the Office of Advising and Career Development, provides academic and other accommodations for students with disabilities. To assist students to be able to participate in the various programs, services, and activities of the institution, Kōkua 'Ike requires the support, cooperation, and partnership of faculty, other teaching staff, and administrators within the University community.

ADA Accommodation Contact Information:

For general inquiries, email: ada@chaminade.edu

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for

all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Attendance Policy

Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address or by leaving a message with the instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade.

Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades.

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu ADA Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes. Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Academic Conduct Policy

Any community must have a set of rules and standards of conduct by which it operates. At Chaminade, these standards are outlined so as to reflect both the Catholic, Marianist values of the institution and to honor and respect students as responsible adults. All alleged violations of the community standards are handled through an established student conduct process, outlined in the Student Handbook, and operated within the guidelines set to honor both students' rights and campus values.

Students should conduct themselves in a manner that reflects the ideals of the University. This includes knowing and respecting the intent of rules, regulations, and/or policies presented in the Student Handbook, and realizing that students are subject to the University's jurisdiction from the time of their admission until their enrollment has been formally terminated. Please refer to the [Student Handbook 22-23](#) for more details.

Counseling

Counselors will be available to support our campus community using a HIPAA (Health Insurance Portability and Accountability Act) compliant online platform called Zoom HIPAA. Anyone who wants to speak with a counselor should send an email to the counselingcenter@chaminade.edu or call us directly at (808) 735-4845 to arrange an appointment. This email address is monitored daily.

Anyone experiencing a mental health crisis who must have immediate assistance or who needs help outside of business hours is encouraged to access one of these resources:

- Call 911
- Go to the nearest local emergency room (only if deemed necessary with pandemic)
- Call Crisis Line of Hawaii at (808) 832-3100

- The NAMI (National Alliance on Mental Illness) Helpline at (800) 950-6264
- The National Suicide Prevention Line at (800) 273-8255 - for hearing impaired (800) 799-4889
- The Crisis Text Line by texting 741-741
- The Veterans Crisis Line at (800) 273-8255
- LGBTQ Trevor Crisis Line at (866) 488-7386

Please refer to our Counseling Center webpage at [Our Services](#) for Counseling Center information for students, faculty, and parents, as well as for COVID-19, self-help, wellness, and crisis resources.

2024 Lecture and Lab Schedule (subject to change)

Env202/L Spring 2024	Tuesday Lecture	Thursday Lecture	Friday Lab Henry Lab 10	Discussion Posts and Labs due Friday midnight
Week 1: Jan 9,11,12	Course Introduction and Measuring Motion	More Motion and Problem Set 1	Lab 1 (Measuring Motion) and Lab Report Format	Discussion 1 Post & Response Due
Week 2: Jan 16,18,19	More Motion and Problem Set 1	Finish Problem Set 1	Lab 2 (Graphing Motion)	Lab 1 Due
Week 3: Jan 23, 25, no lab Jan 26 *15 min individual meeting	Newton's Laws (Forces)	More Newton's Laws and Problem Set 2	No Lab - Sign up for 15 min individual meeting	Discussion 2 Post & Response Due
Week 4: Jan 30, Feb 1,2	More Newton's Laws and Problem Set 2	Finish Problem Set 2	Lab 3 (Pendulum - Forces)	Lab 2 Due
Week 5: Feb 6,8,9	Exam 1: Describing motion, Newton's Laws (Forces) - Group	Exam 1: Individual - 1 3x5 card for notes	Research Protocols (Mila) - Positionality Statement	Discussion 3 Post & Response Due
Week 6: Feb 13,15,16	Energy	More Energy and Problem Set 3	Lab 4 En-ROADS - plan to meet 1.5 C goal	Lab 3 Due
Week 7: Feb 21, 23, 24	More Energy and Problem Set 3	Finish Problem Set 3	Lab 5 (Pendulum - Energy)	Discussion 4 Post & Response Due

Week 8: Feb 27,29, March 1	Waves	More Waves and Problem Set 4	No Lab - Sign up for 15 min individual meeting	Lab 4 Due
Week 9: March 7, 9, 10	More Waves and Problem Set 4	Finish Problem Set 4	Lab 6 (Waves)	Discussion 5 Post & Response Due
Week 10: March 14, 16, 17	Exam 2 - Energy and Waves - Group	Exam 2 - Energy and Waves - Individual - 1 3x5 card for notes	No Lab - Sign up for 15 min individual meeting	Labs 5 & 6 Due
Spring Break				
Week 11: March 26,28,29	Holiday	Maundy Thursday Class 4 - 450	Good Friday - No lab	Summaries of 2 Peer-Reviewed Research (Literature Review) Due
Week 12: April 4,6,7	Motion applications	Newton's Laws and Forces applications	Zoom - Work on Introduction, Materials, Method - Research Paper	Research Paper Draft Introduction, Materials, Methods Due
Week 13: April 11,13, 14	Energy applications	Waves applications	Zoom - Work on Draft Data Analysis, Results - Research Paper	Research Paper Data Analysis & Results Draft Due
Week 14: April 18, 20, 21	Problem Set 5 - Motion, Forces, Energy, Waves Applications	Finish Problem Set 5	Zoom - Work on Conclusion, Abstract - Research Paper	Complete Research Paper Draft Due
Week 15: April 25, 27, 28	Problem Set 6 (Write Exam Questions)	Finish Problem Set 6	Peer Review (& Posters) for (Revised if needed) Research Paper	
Final Exams	TBA			Final Exam Due