Natural Sciences and Mathematics

Environmental Studies

ENV202/L Environmental Physics Lecture/Lab

Lecture Behavioral Sciences 102 Tues & Thursday 4:00P-5:20P

Lab Henry Lab 10 Thursday 5:30p-820p

Credits: 3/1 Section: 1/1 Term: Spring 2026

Instructor Information

Instructor: Jerelyn T. Watanabe
Email: jerelyn.watanabe@chaminade.edu
Phone: 808.258.9239
Office Location: Henry 123C
Office Hours: Tuesdays and Thursdays 3 - 4 pm
Virtual Office: TBD
Virtual Office Hours: TBD

Communication

With me

Chaminade email will be the primary platform for communication with me and I will respond to your messages within 24 hrs M-F. I will send a weekly informational message through email which will include preparation for each class and my expectation is that you will read all Inbox messages from me and will come to class prepared and with all required materials.
I will respond to Canvas Inbox messages in the same timeframe.

You are also welcome to text me 24-7 (including at night and on weekends) and I will do my best to respond promptly.

If you will be late or will miss class, please send me a message through email, Inbox or text as soon as possible. Your presence is important to the class dynamic and we will all miss out when you are not there.

With other students

Canvas Inbox will also be the primary way for you to communicate with other students in this class. Please respond to messages from other students within 24 hours if at all possible.

Netiquette

When interacting with others in this course, remember that we are all humans deserving of respect and consideration. This description of excellent Netiquette comes from the University of Connecticut's Rules of Netiquette in Online & Distance Learning Courses:
https://onlinestudent.uconn.edu/netiquette/

School & Department Information

School of Natural Sciences & Mathematics

Office Location: Wesselkamper Hall 116
Phone: (808) 440-4204

If you have questions regarding the Environmental Sciences Department, reach out to your Instructor or the School of Natural Sciences & Mathematics.

Course Description & Materials

Catalog Course 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.

Co-requisites/Pre-Requisites: Concurrent Enrollment in ENV202 and ENV202L.

Time Allocation

ENV202 is a three-credit hour course requiring 135 clock hours of student engagement, per the official CUH Credit Hour Policy. Over the 15 weeks of this course, students will spend 45 hours in class working on simulations and applied problem solving, 40 hours on self-directed researching, reading and formal writing, 40 hours preparing for assessments and problems solving through formative assessments and other study materials, and 10 hours preparing for and taking the final exam.

ENV202L is a one-credit hour course requiring 45 clock hours of student engagement, per the official CUH Credit Hour Policy. Over the 15 weeks of this course, students will spend 27 hours conducting lab experiments and writing lab reports, and 18 hours on a scientific research report and presentation.

Required Materials

- Lab Coat and Closed-toe shoes are required for each Lab session.
- *Khan Academy* AP®/College Physics 1 *https://www.khanacademy.org/science/ap-college-physics-1*
- *Khan Academy AP®/College Physics 2 https://www.khanacademy.org/science/ap-physics-2*

Note: All Khan Academy content is available at no cost at (www.khanacademy.org).

- *PhET Interactive Simulations available at no cost at https://phet.colorado.edu/*

Simulation by PhET Interactive Simulations, University of Colorado Boulder, licensed under CC-BY-4.0 (https://phet.colorado.edu).

Technology Information You will need a laptop or tablet to submit assignments in Canvas and use other online tools. You **will not need to create an account** for the external websites and services used in this course. If you do choose to create an account, this may allow you to access additional features within the learning tools. We will use the following external websites and services:

- Zoom
- Khan Academy
- Khan Academy Videos
- PhET Interactive Simulations
- Desmos Graphing Calculator

Canvas (https://chaminade.instructure.com)
Canvas will be used for your primary access to course materials, class activities, including online submission of assignments, grading rubrics, grades and feedback.

Learning Outcomes

Program Learning Outcomes (PLOs)

Upon completion of the undergraduate B.S. program in Environmental Science, the student will be able to:

1. Authenticate their commitment to service, justice and peace through experiential project-based activities that enhance the condition of the integral ecology, care for creation and value all voices.
2. Apply scientific reasoning and methodology to environmental problems.

3. Identify the major physical, chemical and biological components, interactions and cycles of earth systems and ecosystems.
4. Propose, design and participate in scientific research projects that document, describe and/or help solve environmental problems and foster sustainability.
5. Pursue throughout their education new scientific knowledge and techniques that prepare them for the adaptation and change essential to environmental problem solving.

Course Learning Outcomes (CLOs)

Upon completion of ENV202/L, the student will be able to:

1. Demonstrate problem-solving skills from diverse disciplines for diverse populations
    a. Know the difference between fact and opinion
    b. Take a balanced outlook
    c. Be aware of the perspectives and value systems of others
    d. Be able to arrive at creative solutions
2. Demonstrate a solid scientific foundation
    a. Be able to assess the veracity of information
    b. Have experience reading the primary scientific literature
    c. Be able to conduct research
    d. Understand the role science plays in environmental problem-solving
3. Demonstrate good written and oral communication skills
    a. Be able to write a scientific research report (Lab)
4. Know the major environmental issues and their potential solutions
5. Articulate the roles and importance of laws, politics and economics in environmental issues

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, and integrity of creation.
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 ʻOlelo Noʼeau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua (ʻŌlelo Noʻeau 364) May I live by God.

2. Provide an Integral, Quality Education (Na'auao) Lawe i ka maʻalea a kūʻonoʻono (ʻŌlelo Noʻeau 1957) Acquire skill and make it deep.
3. Educate in Family Spirit (ʻOhana) ʻIke aku, ʻike mai, kōkua aku kōkua mai; pela iho la ka nohana ʻohana (ʻŌlelo Noʻeau 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 noʻeau (ʻŌlelo Noʻeau 1430) Education is the standing torch of wisdom.
5. Educate for Adaptation and Change (Aina) ʻAʻohe pau ka ʻike i ka hālau hoʻokahi (ʻŌlelo Noʻeau 203) All knowledge is not taught in the same school

Naʻauao
Lawe i ka maʻalea a kūʻonoʻono
(ʻŌlelo Noʻeau 1957)
Acquire skill and make it deep.

All of you are enrolled in this course because it is required and I hope you are looking forward to learning physics and increasing your confidence in using mathematics to describe the physical environment around you.

This may be the first time you have encountered physics and the mathematics that is used to describe physics. Or, you may have had one or more courses in physics and have taken Calculus, the language of physics. Since each of you have a different background, this class is an opportunity for me to activate the Marianist value, "Provide an integral, quality education." through my teaching. My goal is to strengthen your math understanding and skills while I share physics concepts with you.

The corresponding Native Hawaiian value of Naʻauao, and ʻŌlelo Noʻeau 1957, "Aquire skill and make it deep," speaks to your learning. This course will provide opportunities for you to deepen your observational and diagnostic skills through the abstract concepts that are presented in the course. While you may not apply these concepts directly in your career, these skills will translate to your particular context.

ʻIke aku, ʻike mai, kōkua aku kōkua mai; pela iho la ka nohana ʻohana

(ʻŌlelo Noʻeau 1200)

Recognize others, be recognized, help others, be helped; such is a family relationship

Also, given this diverse starting point, I consider the Marianist value, "Educate in family spirit," to be crucial to my teaching and your learning. I believe that the best way to learn is to teach and those of you who have more experience with physics will be asked to help your peers. I ask those of you who are just starting out with physics to trust that I will help you to understand the concepts and mathematics to whatever depth you choose. Your peers were all once in the same situation and remember what it was like to engage with difficult content. My experience at Chaminade has been that students, staff, and other professors engage with each other with kindness and consideration. This is one of the manifestations of this Marianist value in the Chaminade community.

Specifically, when we do physics problems, we will do them together, in class. Since there is only one of me, I ask that you work with a small group and try to resolve any questions amongst yourselves before you ask me. I hope that by drawing on your previous experience of physics, you will gain confidence in your understanding. I will answer any and all of your questions, however, you may find that your classmate's explanation makes more sense than mine!

Alignment of Marianist Values, PLOs, and Native Hawaiian Values with Course Learning Outcomes

	CLO 1: Problem Solving Skills	**CLO 2:** Scientific Foundation	**CLO 3:** Communication Skills	**CLO 4: Know** Issues and Solutions	**CLO5:** Articulate Context
Marianist Values	3. Educate in Family Spirit	2. Quality Education	4. Educate for Service, Justice, and Peace	5. Educate for Adaptation and Change	1. Educate in Formation of Faith
PLOs	5. Environmental Problem Solving	3. Earth Systems and Ecosystems	1. Commitment to Service, Justice, and Peace	2. Scientific Reasoning and Methodology	4. Scientific Research Projects
Native Hawaiian Values	3. ʻOhana	2. Naʻauao	4. Aloha	5. Aina	1. Mana

Course Assessments

Reading, Discussion, and Reflection Assignments

You will be asked to read article(s) and/or watch videos, discuss the content with your peers, and create reflection assignments. This process supports internalizing new ideas into your existing understanding and focuses on communicating these connections through text and other formats.

Conceptual Physics Problem Sets

Completing the physics problem sets 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.

Three Exams and a Final Exam

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 for calculations (but you won't need it).

ENV202L – Lab Reports & Research Paper

Lab Reports and the Research Paper fulfill several Environmental Science/Studies Program Objectives and skills that include: to possess a solid scientific foundation, to be able to conduct research, to understand the role science plays in environmental problem solving, to possess good written and oral communication skills, and to be able to write a scientific research report.

Alignment of Assessments with Course Learning Outcomes

	CLO 1: Problem Solving Skills	CLO 2: Scientific Foundation	CLO 3: Communication Skills	CLO 4: Know Issues and Solutions	CLO5: Articulate Context
Reading, Discussion & Reflection		Yes	Yes	Yes	Yes
Problem Sets	Yes	Yes	Yes		
Exams	Yes	Yes	Yes		
Lab & Research Reports	Yes	Yes	Yes	Yes	Yes

Communication Regarding Assessments

I will grade assignments within one week of submission and all grades will be entered in Canvas. Most assignments will be graded using a rubric embedded in Canvas and I will write additional comments in case you would like to revise and resubmit the assignment. I will write comments directly on handwritten assignments such as problem sets and exams. My expectation is that you read these comments whether or not you choose to revise your assignment.

Your responses to peers in Discussion assignments will be graded by a rubric embedded in Canvas.

While collaboration on assessments is required, my expectation is that your submitted assignments will be your individual version of the solution, procedure, etc.. There may be one answer but each of you will explain it differently based on your background knowledge and distinct perspective.

Course Policies

Attendance

Attendance at every class is required though you will be excused due to illness or extenuating circumstances. If you will miss a class send me an email or text as soon as possible so that we can set up an appointment to go over the activities that you would miss.

Late Work

Each course activity is essential to the learning outcomes so it is expected that every activity is completed to the best of your ability. Therefore, late work will be accepted as long as you email your request for an extension.

Extra Credit

Each course activity is essential to the learning outcomes so it is expected that every activity is completed to the best of your ability. Limited Extra Credit opportunities may be available.

AI

Understanding physics concepts requires interaction with problem solving in as many ways as possible - this will include written explanations, drawing diagrams, graphing, solving mathematical equations, and creating presentation slides. Because of this, AI such as ChatGPT may not be used for any of your writing – including, but not limited to – reflections, problem sets, lab reports, and formal reports.

Changes to the Syllabus

While the provisions of this syllabus are as accurate and complete as possible, your instructor reserves the right to change any provision herein at any time. Every effort will be made to keep you advised of such changes, and information about such changes will be available from your instructor.

Grades of Incomplete

It is expected that you will complete the course activities in a timely manner during the semester. However, a student may obtain an I-grade with instructor permission.

Final Grades

Final grades are submitted to Self-Service:

A = 90% and above
B = 80-89%
C = 70-79%
D = 60-69%
F = 59% and below

Important Information

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 ʻIke: 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 ʻIke: 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 ʻIke'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 ʻIke at tutoring@chaminade.edu or 808-739-8305.

Lecture and Lab Topics (subject to change)

Week	Lecture - Tuesday & Thursday	Lab - Thursday
1	Course Syllabus & Describing Motion	Lab Safety & Academic Writing
2	Describing Motion	Lab 1: Describing Motion
3	Describing Motion	Research Project - Topics
4	Exam 1: Describing Motion	Lab 2: Graphing Motion

5	Forces and Newton’s Laws	Lab 3: Pendulum (Forces)
6	Forces and Newton’s Laws	Research Project - Literature
7	Forces and Newton’s Laws	Lab 4: Forces
8	Exam 2: Forces and Newton‘s Laws	Lab 5: En-ROADS
9	Energy	Research Project - Data Sets
Spring Break		
10	Energy	Lab 6: Pendulum (Energy)
11	Energy	Lab 7: Energy
12	Exam 3 - Energy	Research Project - Discussion
13	Waves	Lab 8: Waves
14	Waves	Lab 9: Waves (Research Paper Due)
15	Waves	Research Project - Peer Review
Final Exam	Thursday, May 7, 2026, 830 - 1030 am	