Course Syllabus

Course Number: ENV 490 Section 2
Course Title: Particle Toxicology & Health
Department Name: ENV
School: School of Natural Sciences and Mathematics
Term: Spring 2025
Course Credits: 3
Class Meeting Days: Fridays
Class Meeting Hours: 2:30-5:20 PM
Class Location: Henry Hall, Lab 3

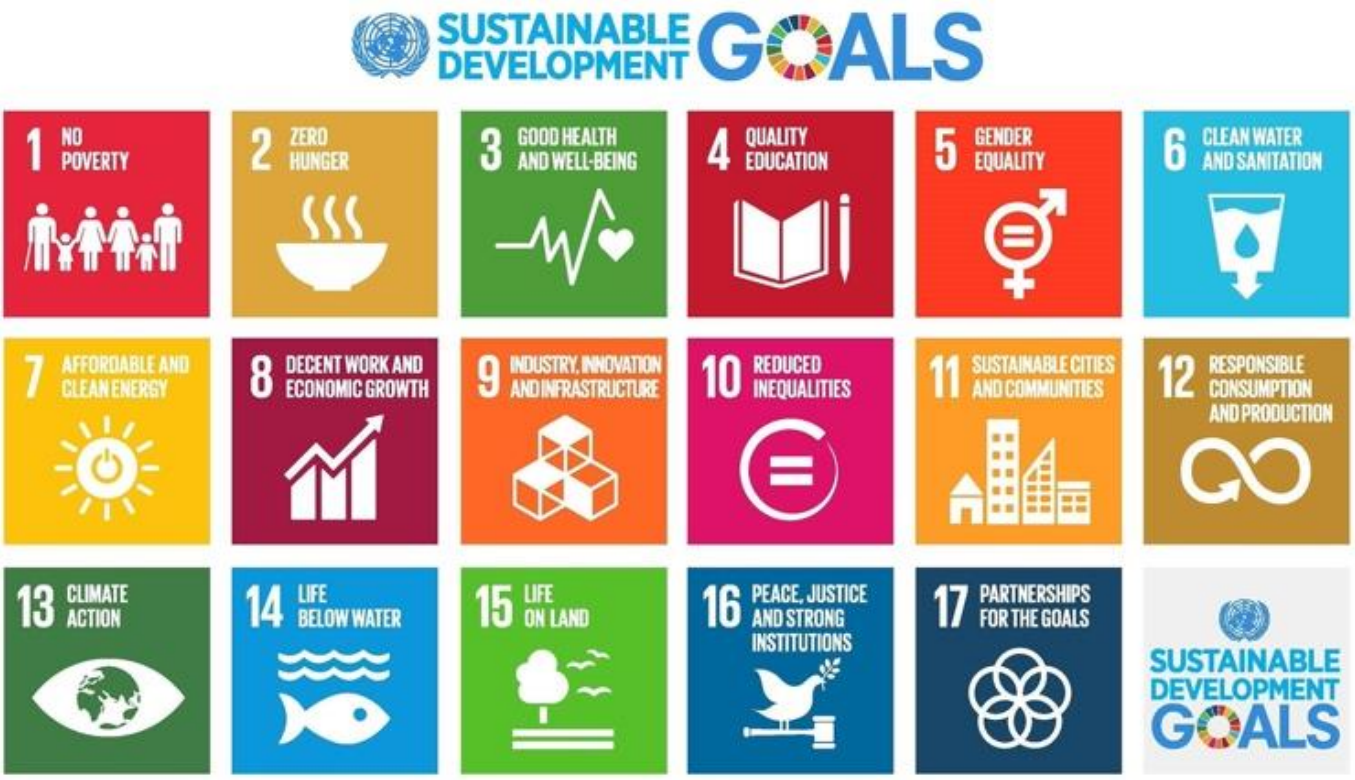
Instructor Name: Natalija Glibetic, PhD (she/her)
Email: natalija.glibetic@chaminade.edu
Phone: 808-773-1376
Office Location: Tredtin Hall 202 (DART)
Office Hours: Fridays 1:30 – 2:30 PM

1. University Course Catalog Description

Selected topics of current interest in environmental studies will be addressed. Prerequisites: none. Offered annually, Spring semester.

2. Course Overview

This course has several themes: It will explore the toxicological impacts of nano-plastics, examining how these materials interact with cellular systems and contribute to global health challenges. Students will gain hands-on experience with advanced microscopy techniques, including fluorescence imaging and scanning electron microscopy (SEM), to analyze plastic particulates' effects on cells. The course emphasizes the use of data-driven approaches to understand and address the health impacts of nanoplastics and microplastics, connecting experimental findings to broader environmental and public health contexts, such as pollution mitigation and health equity. Students will engage in journal clubs to critically evaluate current research, apply experimental protocols to investigate particulate toxicology, and develop skills in data interpretation and visualization. The role of emerging technologies, including co-localization staining and SEM imaging, will be examined in the context of scientific discovery and communication. Finally, students will refine their ability to communicate scientific findings through collaborative writing projects and presentations, emphasizing best practices in storytelling and reporting.



3. Program Learning Outcomes

Upon completion of the undergraduate B.S. program in Environmental Science, students 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.

4. Course Learning Outcomes and Linkage to Program Learning Outcomes

CLO

	1	2	3	4	5
1. **Describe** the impact of nano-plastics on human and environmental health, based on information derived from primary scientific literature, and identify open research questions in the field.	X	X	X	X	X
2. **Evaluate** scholarly articles in the field of nano-plastic toxicology to assess their contributions and limitations.	X	X	X		X
3. **Design and execute** advanced imaging experiments to assess the cellular impacts of particulate nano-plastics.		X		X	X
4. **Visualize, analyze, and interpret** experimental data to generate scholarly scientific reports that effectively communicate findings to academic audiences.		X		X	X
5. **Visualize, analyze, and interpret** experimental data to create science communication products, incorporating best practices for community dissemination of scientific research	X	X		X	X

5. Course Prerequisites

COM 101, EN 102

6. Required Learning Materials

The course outline will be provided on Canvas

Technical Assistance for Canvas Users: Search for help on specific topics at help.instructure.com. Chat live with Canvas Support 24/7/365. Watch this video to get you started with online guides and tutorials. Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu, or call (808) 735-4855

7. Assessment

Attendance/Participation	350 points	35%
Journal Club Reflections	50 points each/200 total	20%

Major Assignment 1	200 points	20%
Major Assignment 2	150 points	15%
Major Assignment 3	100 points	10%
Total	**1000 points**	**100%**

8. Grading Scale

Letter grades are given in all courses except those conducted on a credit/no credit basis. They are interpreted as follows:

A 90-100% 900 points or more

Outstanding scholarship and an unusual degree of intellectual initiative

B 80-89% 800-890 points

Superior work done in a consistent and intellectual manner

C 70-79% 700-790 points

Average grade indicating a competent grasp of subject matter

D 60-69% 600-690 points

Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work.

F <60% 59 points or less

Failed to grasp the minimum subject matter; no credit given

9. Course Schedule

This schedule is meant as a guideline and is subject to change at the instructors' discretion. The student will be notified of any significant deviations from this schedule.

Syllabus					
Major Theme	**Week**	**Class Portion (Allocated Time)***	**Lab Portion (Allocated Time)***	**Deliverables**	**Additional Notes**
	Week 1 (Jan 10)	Course Intro & Safety: Overview and Expectations (2:30-3:30)	Lab Tour, Assign Projects: Nanoplastics & Microplastics (3:30-5:20)		Assigned Article: MSL Yee et al. 2021
Fluorescent Microscopy	Week 2 (Jan 17)	Journal Club #1 (2:30-3:30)	Cell Culture Demonstration, Cell Culture Practice (3:30-5:20)		
	Week 3 (Jan 24)	Experiment 1 Theory (2:30-3:30)	Experiment; Imaging of Nanoplastics on Fluorescent Microscope (3:30-5:20)		Student #1 (or Group #1) chooses article
	Week 4 (Jan 31)	Data Analysis & Troubleshooting (2:30-3:30)	Experiment; Imaging of Nanoplastics on Fluorescent Microscope (3:30-5:20)		
	Week 5 (Feb 7)	Journal Club #2: Student Article; Data Analysis (2:30-3:30)	Experiment; Imaging of Nanoplastics on Fluorescent Microscope (3:30-5:20)		Student #2 (or Group #2) chooses article
	Week 6 (Feb 14)	Scientific Report Overiew and Report Write-Up (2:30-3:30)	No lab portion (TBD)		
Scanning Electron Microscopy	Week 7 (Feb 21)	SEM Overview (2:30-3:30)	SEM Imaging: Stub Preparation and Imaging (3:30-5:20)	Major Assignment #1 Due	
	Week 8 (Feb 28)	No Class			
	Week 9 (Mar 7)	No class portion	Experiment; SEM Cell Sample Preparation & Imaging (3:30-5:20)		Student #3 (or Group #3) chooses article
	Week 10 (Mar 14)	Journal Club #3: Student Article; Data Analysis (2:30-3:30)	Experiment; SEM Imaging: Imaging (3:30-5:20)		
	Week 11 (Mar 21)	No Class – Spring Break			
	Week 12 (Mar 28)	No Class - Independent Work on Major Assignment #2			
Scientific Writing	Week 13 (Apr 4)	Scientific Presentations (Major Assignment 2)	TBD: Dependent on Data Collection	Major Assignment #2 Due	
	Week 14 (Apr 11)	Journal Club #4: Student Article (2:30-3:30)	TBD: Dependent on Data Collection		
	Week 15 (Apr 18)	Scientific Writing Workshop: Formatting for Submission (2:30-3:30)	No Lab Portion		
	Week 16 (Apr 25)	Final Wrap-Up (2:30-5:20)		Major Assignments #3 Due	
*Subject to change					

10. Policies, Guidance and Assistance

Technical Assistance for Canvas Users:

- Search for help on specific topics or get tips in Canvas Students
- Live chat with Canvas Support for students
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this video to get you started
- Online tutorials: click on "Students" role to access tutorials
- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu or call (808) 735-4855

Tutoring and Writing 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 (https://chaminade.edu/advising/kokua-ike/) 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 Account – Notifications – TutorMe. For more information, please contact Kōkua 'Ike at tutoring@chaminade.edu or 808-739-8305.

Late Work Policy

Requests for extensions due to extenuating circumstances (documented computer or medical problems, for example) will be considered but in general work received after the deadline will not be graded (i.e., will receive a score of zero).

Grades of "Incomplete"

Should you encounter a significant medical or personal event that prohibits you from completing the course requirements within the time that is allocated for this course, an incomplete grade can be given. Issuance is not automatic, and is at the discretion of the faculty member. An incomplete grade may be assigned to a student who has successfully completed with at least a passing grade the majority of the work of the course, and who has an unavoidable and compelling reason why the remainder of the work cannot be completed on schedule.

Writing Policy

Guidance on written assignment formatting and citation style will be provided in class.

Instructor and Student Communication

Questions for this course can be emailed to the instructors. Online, in-person and phone conferences can be arranged. Response time will take place up to 24 hours..

Disability Access

If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from Kōkua 'Ike: Center for Student Learning by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua 'Ike Coordinator at (808) 739-8305 for further information (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

The following attendance policy is from the Academic Catalog: Faculty members should also check with their divisions for division-specific guidelines. "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, calling the instructor's campus extension, 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 Tutor 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

From the 2019-2020 Undergraduate Academic Catalog (p. 39):

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 for more details. A copy of the Student Handbook is available on the Chaminade website. For further information, please refer to the Student Handbook: https://chaminade.edu/wp-content/uploads/2019/08/NEW-STUDENT-HANDBOOK-19-20-Final-8.20.19.pdf

Credit Hour Policy

The unit of semester credit is defined as university-level credit that is awarded for the completion of coursework. One credit hour reflects the amount of work represented in the intended learning outcomes and verified by evidence of student achievement for those learning outcomes. Each credit hour earned at Chaminade University should result in 45 hours of engagement. This equates to one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester, 10 week term, or equivalent amount of work over a different amount of time. Direct instructor engagement and out-of-class work result in total student engagement time of 45 hours for one credit. The minimum 45 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practica, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies. The minimum 45 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practica, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

This is a three-credit hour course requiring 135 clock hours of student engagement, per the official CUH Credit Hour Policy. Students enrolled in this course are anticipated to spend 135 hours working on the class:

- 35 hours across 26 x 80 minute class sessions/lectures
- 35 hours in total homework assignments (5 homeworks)
- 5 hours attending Office Hours
- 60 hours researching and completing two Major Assignments