



UNIVERSITY of HAWAII
WINDWARD COMMUNITY COLLEGE

Ke Kulanui Kaiāulu o ke Ko'olau

SCI295v INTRODUCTION TO STEM RESEARCH

Fall 2025

03 Credits | CRN 62499

Windward Community College Mission Statement

'O keia ka wā kūpono e ho'onui ai ka 'ike me ka ho'omaopopo i kō Hawai'i mau ho'oilina waiwai. Aia nō ho'i ma ke Kulanui Kaiāulu o ke Ko'olau nā papahana hou o nā 'ike 'ake akamai a me nā hana no'eau. Me ke kuleana ko'iko'i e ho'ohiki ke Kulanui e kāko'o a e ho'okumu i ala e hiki kē kōkua i ka ho'onui 'ike a nā kānaka maoli. Na mākou nō e ho'olako, kāko'o a paipai i nā Ko'olau a kō O'ahu a'e me nā hana no'eau ākea, ka ho'ona'auao 'oihana a me ka ho'onui 'ike ma ke kaiāulu— hō'a'ano a e ho'oulu i nā haumāna i ka po'okela.

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide the Ko'olau region of O'ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment – inspiring students to excellence.

Instructor Information

How to Contact Your Instructor

Derek Esibill

Office: Hale Uluwehi B104 (808) 284-6388

Office Hours: Days/times students may drop in for help

Email: esibill@hawaii.edu

ZOOM: <https://hawaii.zoom.us/my/derekesbill> (Passcode: Kahiau)

Aloha, a little bit about me. I ran operations of oceanographic research vessels for 10 years, before teaching science for the Hawai'i department of education where my students were engaged in research projects investigating correlations between age, bacterial infection, and age on coral tumors; and water quality in Hawai'i's estuarine systems. In addition to being a lecturer for Windward Community College, I am the Chief Operating Officer for the Pacific American Foundation ([PAF](#)). I manage Watershed Investigations, Research Education, and Design ([WIRED](#)). A program that engages 6th-12th grade students in current, research investigating the impacts of land management practices on watersheds including coral reefs through a Native Hawaiian epistemological lens. I am an instructor for [NALU Studies](#). I am an avid paddler, surfer, and sailor who loves all things ocean. You can expect grades entered our google classroom weekly, we will use that space for assignments and communication.

Alternate Contact Information

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

- Location: Alaka'i 121
- Phone: (808) 235-7422

Course Information

Catalog Description

SCI 295V offers a research experience in science, technology, engineering, and/or mathematics, emphasizing the application of the scientific method to a specific project. Repeatable for up to 6 credits. (3 hours cooperative education/work experience per week per credit)

SCI 295V offers a research experience in science, technology, engineering, and/or mathematics, emphasizing the application of the scientific method to a specific project. The Experiential Learning in Environmental Sciences mini-course for youth in Hawai'i at Windward Community College and the Hawai'i Institute of Marine Biology it will focus on utilizing a hands-on educational approach in an effort to provide Hawai'i's high school students with a depth of knowledge and understanding that will support them in making relevant and informed decisions with respect to the environment. This course will consist of a clearly defined focus on stewardship through discussions on concepts and information led by scientists and professionals in the areas of environmental science, marine science, meteorology, biology, chemistry, creative writing, scientific writing, art, technology, and Hawaiian culture, focusing these disciplines as they pertain to sustainable agriculture. These participating scientists, professionals, and staff will provide the students with hands-on training on techniques and equipment use in an effort to establish a solid knowledgebase and skill set in environmental science. Students will be engaged in water quality work, using instrumentation and chemical analysis, they will learn how to identify and assess benthic habitat of our coral reef system, including the identification of invertebrate benthos, fish, and plankton. Students will learn how to use 21st technology to engage in environmental assessments that incorporate Unpersoned Aerial Vehicles (UAV) and Remotely Operated Vehicles (ROV).

Activities Required at Scheduled Times Other than Class Times

We will have lab work on certain Saturdays to support biocultural restoration efforts at Waikalau Loko I'a

Student Learning Outcomes

As a result of taking this course, students can expect to attain the following outcomes:

1. Use research and technology skills to access information from multiple sources
2. Design and implement a plan to solve a specific STEM-based research project(s)

3. Collect, analyze and interpret data generated by the selected research project(s)
4. Communicate conclusions in written and/or oral form

Required Materials

Laptop computer, hiking shoes, swimwear for coral reef expeditions.

Course Format

This is a face to face class we meet on Sundays from 0945 to 1315. As this is a methods class, attendance is mandatory and is a driver in evaluation.

Course Technology (Optional)

Google Classroom Learning Management System Class Code: x63rhzn

- [Keeping Accessibility and UDL in Mind - Google Docs](#)

Regular Substantive Interaction

Online courses at Windward Community College follow these guidelines for ensuring quality instruction: [RSI Definition-WCC](#).

Other Technology

Review the privacy/security policies before using the technologies we will be using in this class. Contact me if you would like to discuss the use of alternate options or technologies.

- [Google Sheets](#) is used to create assignment and reference worksheets ([accessibility statement](#), [privacy policy](#))
- [Google Docs](#) is used to create the Course Design Document and rubrics ([accessibility statement](#), [privacy policy](#))
- Google Slides is used for presentations
- [H5P](#) is used for creating review activities ([accessibility](#), [privacy policy](#))
- [Kahoot!](#) is used for review activities ([accessibility statement](#), [privacy policy](#))
- [Loom](#) is used for screen recording (accessibility statement not provided, [privacy policy](#))
- [Nearpod](#) is used for interactive presentations ([accessibility statement](#), [privacy policy](#))
- [Padlet](#) is used for some of the discussion activities ([Padlet Accessibility Statement](#), [Padlet privacy policy](#))
- [PearDeck](#) is used for interactive presentations (accessibility statement not provided, [privacy policy](#))
- [Quizlet](#) is used for interaction (accessibility statement not provided, [privacy policy](#))
- [YouTube](#) is used for delivering some of the course content ([accessibility statement](#), [privacy policy](#))
- [Zoom](#) is used for the Synchronous Sessions and virtual office ([accessibility statement](#), [privacy policy](#))

Participation Verification

Campuses are required by federal regulations to verify the participation of students in their classes. In accordance with Executive Policy 7.209, all students in the University of Hawai'i system are required to establish "participation" to ensure that they are not dropped from their class(es). Effective fall 2021, students who fail to participate by the late registration period for a class will be administratively dropped from that class. Students may also be dropped from dependent prerequisite and/or corequisite classes if both courses do not establish participation.

Grading Policy

[Include grading, late work policy, withdrawals, incompletes, and the grading scale. Delete the instructions afterward.]

Assessment Tasks and Grading

The Experiential Learning in Environmental Sciences course at Windward Community College focuses on utilizing hands-on, experiential education approaches and discussions by Hawaii's scientists and professionals in an effort to support and provide Hawaii high school students with a depth of knowledge and understanding that will allow them to make relevant and informed decisions regarding environmental stewardship and career choices. Students enrolled in this course will be evaluated through attendance and active participation, written exercises, quizzes that review scientific concepts and applications, laboratory/field reports, a formal scientific paper, a final examination, and a symposium presentation.

The assignment of points will be according to the following protocol:

Active Participation & Attendance	200	points
Laboratory/Field Reports	200	points
Formal Scientific Paper	200	points
Final Examination	200	points
<u>Symposium Presentation</u>	<u>200</u>	<u>points</u>
TOTAL	1000	points

Letter grades will be assigned as follows:

A	90% or above in total points.
B	80-89.9% of total points.
C	70-79.9% of total points.
D	60-69.9% of total points.
F	Below 60% of total points or informal or incomplete official withdrawal from course or unacceptable attendance (<85% of scheduled days and activities).

I	Incomplete; given at the INSTRUCTOR'S OPTION when student is unable to complete a small part of the course because of circumstances beyond his or her control. It is the STUDENT'S responsibility to make up incomplete work. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change for "I" to the contingency grade identified by the instructor (see catalog).
CR	70% or above in total points; the student must indicate the intent to take the course as CR/NC in writing by the end of the 10th week of classes (see catalog).
NC	Below 70% of total points; this grade only available under the CR/NC option (see above and see catalog).
N	NOT GIVEN BY THIS INSTRUCTOR EXCEPT UNDER EXTREMELY RARE CIRCUMSTANCES (e.g., documented serious illness or emergency that prevents the student from officially withdrawing from the course); not used as an alternative for an "F" grade.
W	Official withdrawal from the course (see catalog).

Waiver of minimum requirements for specific grades may be given only in unique situations at the instructor's discretion.

Weekly Assignments

Week	Date	Topic	Due Dates
1	8/24/25	Introduction to Moku o Lo'e, how tide gauges work and why they are important.	08/24/2025
2	08/31/25	Holiday, no class	
3	9/07/25	How to snorkel and conduct underwater research	
4	09/14/25	Benthic Survey of Moku o Lo'e	
5	09/21/25	Data work up and lab report	09/09/2025
6	09/28/25	Microbial Ecology	
7	10/5/25	Fall Break, No Class	

Week	Date	Topic	Due Dates
8	10/12/25	Pulse Amplitude Modulation Fluorometer	
9	10/19/25	Confocal microscope	
10	10/26/25	DNA Bioinformatics	
11	11/02/25	Design projects and research questions Begin background researchh	
12	11/09/25	Design experiment Begin experiment	
13	11/16/25	Collect project experimental data	
14	11/23/25	Analyze research data and interpret	
15	11/30/25	Holiday, No Class	
16	12/07/25	Work on Projects	
17	12/14/25	Finalize project report	
Finals	12/21/25	Project presentation	

*Bold text denotes a Holiday

Academic Integrity

Work submitted by a student must be the student's own work. The work of others should be explicitly marked, such as through the use of quotes or summarizing with reference to the original author.

In this class, students who commit academic dishonesty, cheating, or plagiarism will have the following consequence(s):

Students will receive a failing grade for plagiarized assignments.

All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

Windward Community College is an equal opportunity, affirmative action institution.

[Windward CC Student Conduct Information](#)

[UH System Student Conduct Policy EO 7.208](#)

The use of artificial intelligence (AI), such as Chat GPT is a burgeoning tool set and understanding how to ethically use this tool set is important. It may be used to facilitate the research and writing processes. It may be used in the editing process, however the creation of documents, images, and other such products is not the student's own work and is considered academic dishonesty. Here are some [UH AI Recommendations](#) and [AI Icons & Sample Statements](#). In this class we have a formal A.I. use policy, please read it [here](#).

Student Responsibilities

- Complete work on time
- Come to class every time we are in session, classwork is the majority of what we do. Due to the nature of this class it is very difficult to make up.
- Students may check the [Student Notifications](#) page on the website for canceled classes

How to Seek Academic or Technical Support

Academic Support

- [Windward Community College Library](#)
- [Library eResources](#)
- [Ka Piko Writing Lab](#)
- [Ka Piko Speech Lab](#)
- [Ka Piko Math Lab](#)
- [Evening and Online Learning at Windward Community College](#)
- [STAR Balance](#)

Technical Support

- [UH ITS Help Desk](#) – email help@hawaii.edu or call 956-8883 (or 1-800-558-2669) for Lamakū and most technology support. Available 24 hours a day, 7 days a week, including holidays.
- Student Tech Support - email winhelp@hawaii.edu, call 808-235-7437, or stop by in person at Hale La'akea 228. Available Monday–Friday from 8:00 am–4:00 pm.
- Lamakū – Click on the [Lamakū Help](#) link in the menu bar at the top of the Lamakū homepage to fill out and submit a question and get your answer via email.
- [Information Security for Students](#)

College Policies & Support Services

Disabilities Accommodations Statement

The Windward Community College's Disability Student Services Office (WCC-DSSO) is committed to providing equal access to qualified students with disabilities.

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to participate fully in this class, you are encouraged to contact the Disability Specialist Counselor, Roy Inouye, to discuss reasonable accommodations that will help you succeed in this class. The Disabilities Counselor can be reached at 808-235-7448, wccdsso@hawaii.edu, or stop by the office (Hale Kako'o 106) for more information.

TRIO PROGRAM

The Federal TRiO Programs are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRiO includes six outreach and support programs targeted to serve and assist low-income, first-generation college students and students with disabilities in progressing through the academic pipeline from middle school to post-baccalaureate programs. Here is their contact info: <https://windward.hawaii.edu/trio/>

Basic Needs

Basic needs include food and housing, childcare, mental health, financial resources, and transportation. Student basic needs security is critical for ensuring strong academic performance, persistence and graduation, and overall student well-being. If you or someone you know is experiencing basic needs insecurity, please see the [UH System Basic Needs website](#).

Mental Health Counseling

Mental Health and Wellness at Windward Community College counseling services and activities on campus to support students' life goals as well as their academic goals. Information about services can be found at the [WCC Mental Health & Wellness website](#).

LGBTQ+

The University of Hawai'i system and Windward Community College are committed to building an inclusive community that supports and advocates for all Students, Staff, and Faculty. We welcome all members of our campus community to our campuses: transgender, māhū, and people of all gender identities. All members of our campus community deserve a work and educational environment free from harassment or bullying based on their sexual orientation, gender identity, or expression. University of Hawai'i Commission on LGBTQ+ Equality at their website: <http://www.hawaii.edu/offices/president/lgbtq/> Windward Community College Commissioner: Scott Sutherland, scottjks@hawaii.edu

UH Alerts

The UH Alert emergency notification system alerts the university community in the event of a natural, health or civil emergency. The information you provide will only be used in the event of an

emergency that impacts the health and safety of the UH community or the closure of whole campuses. It will not be shared with others or used for routine UH communications or announcements. To sign up, visit [UH Alerts website](#) for more information.

Financial Aid

If you are receiving financial aid and are contemplating not completing the course, BEFORE you withdraw, it is highly recommended that you contact the Financial Aid Office at 808-934-2712 or email them at wccfao@hawaii.edu to discuss the impact this decision may have on your financial aid eligibility.

Student Conduct Code

Windward Community College follows the University of Hawai'i Code of Student Conduct which defines expected conduct for students and specifies those acts subject to University sanctions. Students should familiarize themselves with the Code of Student Conduct since, upon enrollment at Windward Community College, the student has placed herself/himself under the policies and regulations of the University and its duly constituted bodies. The disciplinary authority is exercised through the Office of the Vice Chancellor for Student Affairs. Copies of the Student Conduct Code are available at the Office of the Vice Chancellor for Student Affairs or [online](#).

Title IX - Sex Discrimination And Gender-Based Violence Resources

Windward Community College is committed to providing a learning, working, and living environment that promotes personal integrity, civility, 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.

If you or someone you know is experiencing any of these, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

Leslie Cabingabang, UH System Confidential Advocate
Phone/Text: (808) 348-0432 or (808) 341-4952
Email: advocate@hawaii.edu
Office: Hale Kāko'o 107 (Wednesdays)

Mykie E. Menor Ozoa-Aglugub, J.D., Title IX Coordinator
Phone: (808) 235-7468
Email: mozoa@hawaii.edu
Office: Hale Kāko'o 109

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393
Email: dkahale3@hawaii.edu
Office: Hale Kāko'o 101

Karen Cho, Deputy Title IX Coordinator

Phone: (808) 235-7404
Email: kcho@hawaii.edu
Office: Hale 'Alaka'i 120

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. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

For more information regarding sex discrimination and gender-based violence, the University's Title IX resources, and the University's Policy, Interim EP 1.204, go to manoa.hawaii.edu/titleix/