UNIVERSITY of HAWAIʻI
WINDWARD COMMUNITY COLLEGE
Ke Kulanui Kaiāulu o ke Koʻolau

BOT 111 Introduction to Algae
Fall 2026
3 Credits | CRN: 83557

* This syllabus may be adjusted as needed to best support student learning. As your instructor, I will notify you regarding any changes to assignment dates or lectures as soon as I know a change will be made.

About Windward Community College

Mission Statement

ʻO keia ka wā kūpono e hoʻonui ai ka ʻike me ka hoʻomaopopo i kō Hawaiʻi mau hoʻoilina waiwai. Aia nō hoʻi ma ke Kulanui Kaiāulu o ke Koʻolau nā papahana hou o nā ʻike ʻake akamai a me nā hana noʻeau. Me ke kuleana koʻikoʻi e hoʻohiki ke Kulanui e kākoʻo a e hoʻokumu i ala e hiki kē kōkua i ka hoʻonui ʻike a nā kānaka maoli. Na mākou nō e hoʻolako, kākoʻo a paipai i nā Koʻolau a kō Oʻahu aʻe me nā hana noʻeau ākea, ka hoʻonaʻauao ʻoihana a me ka hoʻonui ʻike ma ke kaiāulu— hōʻaʻano a e hoʻoulu i nā haumāna i ka poʻokela.

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawaiʻi and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide the Koʻolau region of Oʻahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

ʻĀina

Windward Community College is located in the ahupuaʻa of Kāneʻohe and Heʻeʻia in the moku of Koʻolaupoko on the island of Oʻahu. Both ahupuaʻa are directly connected to the moʻo ʻōlelo of Pāpa and Wākea, who are seen as the ancestors of the Hawaiian nation. The campus sits beneath the puʻu of Keahiakahoe, which is also connected to many moʻo ʻōlelo of this ʻāina. Because wind names and rain names are associated with specific ʻāina, the rain name of Kāneʻohe is known as the ʻĀpuakea and the rain name of Heʻeʻia is the Ulumano.

Instructor Information

About Your Instructor

Aloha kākou and welcome to BOT 111. I am excited to be your instructor this semester and explore the fascinating world of algae with you all.

My journey as a phycologist (one who studies algae) began during my time working with NOAA's Marine Turtle Biology and Assessment Program as a 19-year-old sophomore studying Marine Biology at the University of Hawaii at Mānoa. I started learning about the diets of honu, the green sea turtle, and fell in love with microscopy work while identifying as many species of algae I could. Over the years, I've worked in various types of labs from sea turtles, reef fish, water quality, and even sharks… but I have always found my way back to my love of limu (Hawaiian algae).

In addition to teaching this class, I am the project coordinator for Windward Community College's Kīʻai Loko Center for Limu Studies. Outside of class time, you'll find me either in my office reading up on the latest algae research, working with other WCC students on their independent research projects, in my lab in Hale Uluwehi, or in the loko i'a.

My goal for you all this semester is to inspire you to take a closer look at any algae the next time you go to the beach, dive, or even when you order a poke bowl.

My classroom is built on respect, reciprocity, and shared learning. All are welcome here. We are all scientists on a journey to better understand the world we live in. In this space, we learn together—sometimes I will not have the answer to every question, but I will always work with you to help you find it and move closer to understanding.

How to Contact Your Instructor

Solimar Carrasquillo Ho

Office: Hale Uluwehi B103

Office Hours: Mondays 12:00 PM – 1:00 PM Hale Uluwehi B103; email for Zoom/GoogleMeets information

Email: solimarc@hawaii.edu

Response time: Generally, I will respond to your emails within 48 – 72 hours, but will check them as often as I can.

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: Alakaʻi 121
- Phone: (808) 235-7422

Contingency Plan

If there is an outage, weather situation, or any emergency I will do my best to find a way to communicate an update as soon as possible about my return to the course. Be sure to check your emails regularly and Lamakū Announcements for any pressing updates.

Mahalo in advance for your understanding and I hope you will do the same.

Course Information

Catalog Description

BOT 111: Introduction to Algae: This course will cover what algae are, why they are important, and why we are interested in them for both their environmental benefit, as well as their use for products. Students will explore the vast diversity of algae including the characteristics and applications of some of the main types of algae that are in commercial use today. Students will learn about algal ecology and how interactions with the environment, including pest and predators, affect algal productivity. Students will examine the processes of algae bio-manufacturing including production processes, as well as some of the products, benefits, and challenges that impact our ability to make commercially viable products from algae. Repeatable up to 6 credits.

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and describe the major algae groups
2. Explain algae diversity and ecology
3. Describe basics of algae biomanufacturing
4. Identify and describe the major algae groups used in sustainable commercial applications

Course Format & Structure

This course is delivered in a fully in-person format. You will be expected to attend all lectures in person to receive full-information necessary to succeed for this class. I will post lecture slides

through Lamakū, but you will find that attending in-person will give you all the information you'll need to prepare for quizzes and exams.

You are responsible to become familiar and knowledgeable with the content presented in these materials.

Please be sure to access Lamakū frequently. It will be very important to read the announcements posted there. My main way of communicating to the papa (class) will be via announcements in Lamakū. I will expect you to check your emails and Lamakū regularly.

Credit Hours, Enrollment, and Workload Expectations

This is a 3-credit course. In accordance with **University of Hawai'i Community Colleges Policy 5.228 (Credit Hour)**, students should expect approximately **9 hours of course work per week**: 3 hours of scheduled class time and a minimum of **6 hours of out-of-class work**, including readings, assignments, studying, and reviewing course materials. Workload may vary from week to week.

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.

Course Materials & Technology

Required Materials

- Regular access to a computer with internet (desktop or laptop).
    - Windward has computers, WiFi hotspots, software, and discounts available to students; see Ka Piko Student Tech Support for information.
    - UH Online provides an online learning Readiness Activity and an Orientation to Online Learning that Windward CC students may take to see if online learning is a good fit.

All resources materials will be presented on the Lamakū website for this class as videos, documents and/or links to other sites. There is no textbook to be purchased for this class.

Use of Artificial Intelligence (AI) In the Classroom

The use of AI in this classroom can be used for brainstorming, helping you generate ideas, clarify concepts. However, AI should be used to support your learning—not to replace your own thinking, writing or scientific reasoning. Students and faculty are expected to abide by University of Hawaii Systemwide Policies (**Executive Policy 2.220**).

Students are expected to:

- Write their own assignments in **their own words** and be able to demonstrate understanding of the material.
- Carefully review and **fact-check** any material/information generated by AI. AI tools can produce inaccurate, incomplete and fabricated material.
- Take full responsibility for any content/assignments submitted regardless if they were produced with AI assistance

Recommended

- D2L Brightspace Pulse App (free download from app stores)

Lamakū Learning Management System (https://lamaku.hawaii.edu/d2l/home)

Learn about the Hawaiian meaning of the word "lamakū": Lamakū Pronunciation, Meaning, and Importance.

- UHCC Lamakū Student Resources (how-to videos) ○
  - Contact UH ITS for 24/7 Lamakū assistance.
- Keeping Accessibility and UDL in Mind
  - ○ If you find any course content that needs remediation and/or updating, please kindly share and I will work to make the content accessible.
- Lamakū courses will appear 5 days before the first day for the academic term and will become inactive (no longer be available to access) 3 weeks after the end of the term. Be sure to save any coursework you may need from Lamakū *during* the term.
- Lamakū automatically logs you out *if it does not detect activity for three hours*. A warning message will appear, notifying you of the lack of activity. Activity is defined as clicking a button in Lamakū, such as "Save Draft" or "Next" (in a test), clicking on a course tab, or taking an action that sends information to the server.

Other Technology

D2L Brightspace, the parent company of Lamakū, recommends users choose the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, or Apple Safari as their internet browser.

We recommend that students update their internet browser at the start of each term, search how to allow pop-up windows, adjust their cookies, and clear device history. Also, fully restart your computer and/or device from time-to-time to optimize performance.

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 alternative options or technologies.

- Canva is a presentation, graphic design software, and more (accessibility statement, privacy policy)
- Google Drive is UH-provided cloud storage (accessibility statement, privacy policy)
- Google Docs is used to create documents (accessibility statement, privacy policy)
- Google Sheets is used to create assignment and reference worksheets (accessibility statement, privacy policy)
- Google Slides is a presentation authoring software provided by UH (accessibility statement, 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)

Grading Policy

Assessment, Tasks, and Grading

Assessment	Points	Percentage
Quizzes — Best 10 of 12	150	**30%**
Midterm Exam	100	**20%**
Algae Species Profile Project & Presentation	100	**20%**
Participation & In-Class Activities	25	**5%**
Cumulative Final Exam	125	**25%**
Total	**500**	**100%**

Quizzes — 30%

Twelve short quizzes will be given in-person at the beginning of the class period and will assess material covered during the previous week. Each quiz is worth 15 points. **Only the best 10 highest quiz scores will count** toward the final grade, allowing students to drop their two lowest

scores. It is in your best interest to take all 12 quizzes, as these will prepare you for the midterm and cumulative final exam.

Midterm Exam — 20%

The midterm exam will assess material covered during the first half of the course.

Algae Species Profile Project — 20%

Algae Species Profile Paper: — 15% Students will select one algae species of their choice and prepare a 2 to 3-page minimum, (double-spaced paper 12-font in Times New Roman) introducing and describing their selected species. The project should demonstrate their understanding of algal biology, ecology, diversity, and/or applications.

The paper should include:

- Species Identification: Common name, Hawaiian name (if applicable) and scientific name; major algal group
- Description: Physical characteristics, morphology, and distinguishing features
- Habitat & Distribution: Where the species is found and the environmental conditions it requires
- Ecology: Ecological role and interactions with other organisms
- Reproduction/Life Cycle: How the species grows and reproduces (if applicable)
- Human Uses or Importance: Food, aquaculture, biotechnology, ecological, cultural, or other significance
- Hawai‘i Connection: When applicable, discuss whether the species occurs in Hawai‘i and its relationship to Hawaiian limu, culture, or local ecosystems
- References: Include credible sources used to research the species

Students should use **credible scientific sources** and properly cite their references. Additional information on Lamakū will be provided to help you prepare your references appropriately.

Algae Species Profile Class Presentation: — 5%

In addition to your paper, students will share their Algae Species Profile with the class through a **3–5 minute presentation** during the final week of the semester. Presentations should briefly introduce the selected species and highlight the most interesting or important information from your research paper.

Presentation goal: Teach your classmates something interesting about your algae!

Participation & In-Class Activities — 5%

Students are expected to actively participate in class activities, discussions, demonstrations, field experiences, and other learning activities. Participation includes being prepared for class, contributing appropriately, and completing assigned in-class activities.

Cumulative Final Exam — 25%

The final exam will be **cumulative** and will assess students' understanding of major concepts covered throughout the semester. Students should be prepared to apply concepts from across the course rather than simply recall individual facts.

Field Trips

Two field experiences will be incorporated into the course. Field trips are designed to connect classroom concepts to real-world applications of algae and limu. Students may be asked to complete observations, activities, or reflection questions associated with each field experience. The second field trip may include a guest lecture from a professional working in limu cultivation, aquaculture, algal research, or an algae-related industry.

Your grade will be based on your participation and performance in completing the above tasks. Corresponding letter grades are as follows:

Letter Grade	
A	100 – 90 points
B	89 – 80 points
C	79 – 70 points
D	69 – 60 points
F	59 and below

Please refer to the WCC College Catalog for audit, withdrawal, and incomplete options.

Late policy

Assignments submitted after the posted due date and time will incur a 5-point deduction for each calendar day they are late. Unless prior arrangements have been made with the professor, late assignments will continue to lose 5 points per day until submitted. Please email me if you think you will not be able to turn an assignment in on time.

Course Schedule

Students may check the Windward Student Notifications page on the website for canceled classes and/or school closures.

Week	Monday	Wednesday	Topics / Activities	Assessment
1	**Aug. 24**	**Aug. 26**	BOT 111 Course Introduction; Science as a Way of Knowing; What is Algae?	—
2	**Aug. 31**	**Sep. 2**	Characteristics of Living Things; Cells & Cell Structure; Algae as Photosynthetic Organisms	**Quiz 1** — Week 1
3	**Sep. 7***(HOLIDAY)*	**Sep. 9**	Cell Reproduction; Plant Life Cycles; Evolution of Algae	**Quiz 2** — Week 2
4	**Sep. 14**	**Sep. 16**	Principles of Evolution; Cyanobacteria; Green Algae	**Quiz 3** — Week 3
5	**Sep. 21**	**Sep. 23**	Green Algae Continued; Red Algae; Field Trip Preparation	**Quiz 4** — Week 4
6	**Sep. 28**	**Sep. 30**	Field Trip Preparation / **FIELD TRIP #1: Algal Diversity, Identification & Field Ecology**	**Quiz 5** — Week 5
7	**Oct. 5**	**Oct. 7**	Ecological Principles; Algal Blooms; Field Trip Debrief	**Quiz 6** — Week 6
8	**Oct. 12**	**Oct. 14**	Midterm Review; **MIDTERM EXAM**	**MIDTERM**
9	**Oct. 19**	**Oct. 21**	**Brown Algae & Diatoms**	—
10	**Oct. 26**	**Oct. 28**	Algal Predators, Pests & Pathogens	**Quiz 7** — Week 9
11	**Nov. 2**	**Nov. 4**	Algae in Aquaculture & Other Uses; Identification of Common Hawaiian Limu	**Quiz 8** — Week 10
12	**Nov. 9**	**Nov. 11**	**FIELD TRIP #2 + GUEST LECTURE:** Limu Farming, Aquaculture & Algal Applications	**Quiz 9** — Week 11
13	**Nov. 16**	**Nov. 18**	Measuring Culture Growth; Nutrient Utilization & Recycling	**Quiz 10** — Week 12
14	**Nov. 23**	**Nov. 25**	Nutrient Recycling; Harvesting & Dewatering	**Quiz 11** — Week 13 **Algae Species Profile Paper Due Nov 29.**

Week	Monday	Wednesday	Topics / Activities	Assessment
15	**Nov. 30**	**Dec. 2**	Chemistry for Bio-Based Materials; Algae Species Profile Project Workshop	**Quiz 12** — Week 14
16	**Dec. 7**	**Dec. 9**	**Algae Species Profile Student Presentations**	**Project & Presentation**
Final	—	—	**Cumulative Final Exam**	**Friday, Dec. 18, 7:30–9:30 AM**

Commented [SCH1]: Need to check how strict we are w/ Final Exam time.

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 CC Student Conduct Information

UH System Student Conduct Policy EO 7.208

Artificial intelligence (AI) may be used to help create outlines for papers or assignments but all work that is turned in should be a reflection of your own thoughts and voice. Please disclose as a reference if a significant portion of your work is AI generated. Plagiarism and using other students' written work in your own writing is not permitted.

Student Kuleana

- Please review our Hawai'i-Style Netiquette, which blends the values of ALOHA with approaches to how we treat each other online.
- Please keep all commentary in this course courteous and professional. Please avoid writing emails and any written work without a subject line, or in incomplete

sentences. The more detailed your writing is, the more constructive feedback can be given.

- Windward CC has Grievance Procedures in place, but I encourage us to try to work together first to see if we can work through any troubles. Mahalo!

Academic and Technical Support

Academic Support

- Windward Community College Library
- Library eResources
  - We are lucky to have our very own Windward CC Librarian embedded in our course to help you! Meet Cindy Texeira, a Hawai‘i Specialist Librarian and Liaison for Hawaiian Studies.
- Library Research Units (LRUs)
- Ka Piko Tutoring Services: Math Lab, Speech Lab, Writing Lab, ‘Ōlelo Hawai‘i Lab
- Online Learning at Windward Community College
- STAR Balance

Technical Support

- UH ITS Help Desk: email help@hawaii.edu or call (808) 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

Your instructor may also provide additional resources in your Lamakū course.

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.

Disabilities Accommodations Statement

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 Kakoʻo 106) for more information.

Financial Aid

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

LGBTQ+

The University of Hawaiʻi 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. For more information, see the University of Hawaiʻi Commission on LGBTQ+ Equality. Windward Community College Commissioner: Scott Sutherland, scottjks@hawaii.edu

Mental Health Counseling

Mental Health and Wellness at Windward Community College provides counseling services and activities on campus to support students' life goals as well as their academic goals. Information about services can be found at WCC Mental Health & Wellness.

Student Conduct Code

Windward Community College follows the University of Hawaiʻi 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, they have placed themselves 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.

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. Information about services can be found at Windward CC TRiO.

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:

Desrae Kahale, UH System Confidential Advocate
Phone: (808) 235-7393
Email: advocate@hawaii.edu
Office: Hale Kākoʻo 101

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

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

Karen Cho, Deputy Title IX Coordinator
Phone: (808) 235-7404
Email: kcho@hawaii.edu
Office: Hale ʻAlakaʻi 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, refer to the University's Title IX resources, and the University's Policy, EP 1.204.

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 for more information.