UNIVERSITY of HAWAI'I
WINDWARD COMMUNITY COLLEGE
Ke Kulanui Kaiāulu o ke Ko'olau

BIOL 171L, Introduction to Biology I Lab
1 Credit
CRN 62011 T 1:30 - 4:15 pm
`Imiloa 106

* This syllabus and/or our Course Schedule is subject to change at any time. I will notify you of any changes via Lamaku/Email. Mahalo!

INSTRUCTOR: Dr. Helen Sung

OFFICE: By appt. Zoom Office

EMAIL: hwsung@hawaii.edu

EFFECTIVE DATE: Fall 2026

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

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.

CATALOG DESCRIPTION

Recommended Preparation: It is strongly recommended to take BIOL 171L concurrently with BIOL 171.
Prerequisites: Credit for or concurrent enrollment in BIOL 171.
BIOL 171L accompanies the BIOL 171 lecture course. Topics covered may include: scientific method, biological molecules, enzyme kinetics, proper technique of compound and stereo microscopes, respirometry, photosynthesis, molecular biology and biotechnology, meiosis and mitosis in plant and animal cells, population genetics, evolution.

STUDENT LEARNING OUTCOMES

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

1. Demonstrate proper use of common lab equipment such as compound and stereo microscopes, respirometer, micropipettes, centrifuges, laboratory glassware, spectrophotometer.

2. Apply the scientific method to design and conduct experiments, generate, test and analyze hypotheses, and construct formal lab reports.

3. Properly construct, analyze and interpret data tables, graphs and scientific illustrations.

4. Demonstrate proper laboratory safety procedures and execute proper lab protocol.

COURSE TASKS

BIOL 171L is taught as an in-person course. Please plan to be in the lab room each week. Pre-lab quizzes will be administered at the beginning of some labs. It is important to be on time to complete the quizzes. You will learn how to construct detailed technical lab reports for the lab exercises we complete throughout the semester. You will also work in groups to conduct research on environmental microbes, this will require a detailed final lab report.

ATTENDANCE IS MANDATORY

Due to the hands-on nature of this course, attendance is required each week. Please notify the instructor if you have to miss a lab at least 24 hours in advance. ONLY TWO ABSENCES ARE ALLOWED. If you miss more than two lab periods, you will automatically fail the course.

ASSESSMENT TASKS AND GRADING

Evaluation and Feedback

Lab assignments will be graded and returned within 96 hours of the due date.

Late Work and Missed Assignments

Late assignments will be accepted up to 1-week after the due date with a deduction of 3 pts.

Final Grade

Your final grade will be calculated based on the following:

Handouts 5-5x10pts each	50 points	30% of final grade
Individual lab reports 4x20pts each	60 points	30% of final grade
Final poster presentation	50 points	30% of final grade
Pre-lab quizzes 10x10pts each	100 points	10% of final grade
TOTAL	200 points	100%

Letter grades will be assigned as follows:

A 90% or above in total points

B 80-89.9% of total points

C 65-79.9% of total points

D 55-64.9% of total points

F Below 55% of total points or informal or incomplete official withdrawal from course.

I Given at Instructor's discretion. See catalog for detailed description.

W Official withdrawal from the course by November 19, 2026

COURSE CONTENT

Topics covered include: scientific method, biological molecules, enzyme kinetics, proper technique of compound and stereo microscopes, respirometry, molecular biology, meiosis and mitosis in plant and animal cells.

LEARNING RESOURCES

1. Textbook: Morgan, J.G. & M.E. Brown Carter. Investigating Biology Laboratory Manual 9th Ed. Benjamin/Cummings Publishing Co, 2018. Auto access through Lamakū IDAP

2. Worksheets and handouts will be available in Lamakū.

COURSE POLICIES

Communication

I will communicate with you frequently through the Announcements and Email tools in Lamakū. Please be sure to check your UH email and the Lamakū Announcements list daily.

Effort and Time

BIOL 171L is an intensive lab course that will require you to prepare for in-person labs ahead of time, create lab reports, collaborate with your group's members, and complete other tasks and skills. Expect to spend 6-8 hours per week on this course.

Participating in our Learning Community

Group work is required for many of our labs this term. The group work will be completed during our lab meeting times. Please see the schedule below for details.

Contacting the Instructor

If you have any questions or concerns about anything, please contact me via email: hwsung@hawaii.edu, and I will respond to you as soon as I can within 24-hours Mon-Fri. Typically, I will not answer emails on weekends unless urgent. Please also feel free to drop in to my online Zoom office hours or make an appt.

Course Tasks, Assessments & Grading

Individual lab reports:

There will be required individual lab reports/worksheets each worth 20 points. You will be given one week to turn in your assignments. An example lab report is provided in the Lamakū Resources folder.

The following information is the format and assignment of points that will be used to assess your lab reports:

Descriptive Title of the lab, your name, and the date. (1 pt)

Introduction/Purpose: A summary paragraph describing *what* we are learning in each lab activity and *why* we are doing the lab, with pertinent background information on the importance and relevance of the concepts we explore. You can gain insight by reading the lab objectives and the introductions at the beginning of the experiments. Make sure you address each of the lab experiments we will cover in the lab. (4 pts)

Materials & Methods: For each experiment that is performed, you should *paraphrase* the materials needed and the methods used to complete that experiment. This is *how* the lab is done. In your lab manual, the methods are referred to as *procedures*. PLEASE DO NOT COPY THE PROCEDURES VERBATIM FROM THE LAB MANUAL. THIS WILL RESULT IN NEGATIVE POINTS. I will let you know specifically what lab studies and/or exercises will be performed, and you should only have materials and methods for those specifically. Also, please be sure to give headings to each list of materials and methods for a particular experiment so that I know which one you are referring to when I grade your reports. If there are questions posed in the procedures section, please answer them as complete sentences or type out the question and answer it. (3 pts)

Results, Data and Observations: In this section you will record all aspects involved in carrying out each experiment. This is where all of your raw data, calculations, experimental notes (mistakes, observations, changes, etc), and illustrations should be. In addition, this is where you will answer questions that are posed by the lab manual. (6 pts)

Conclusions: This section is primarily for labs that have an experimental component requiring data work-up, analysis and interpretation. Answers to the discussion questions in the lab manual should be presented in this section, along with a final paragraph addressing and summarizing your interpretations of the results of all experiments performed by revisiting your hypotheses and determining whether or not your data supports them. Answers to applying and reviewing knowledge questions (if applicable) should also be in this section. (6 pts)

Lab handouts:
Most of the handouts will be completed during lab and due the following week. They will be available as Google Docs.

Pre-lab quizzes:
There will be a total of 5 quizzes that will be administered at the start of some labs. Each quiz will cover content from that day's lab activities, so it is important to review the lab BEFORE coming to class that day to prepare. To help you, I offer extra credit for pre-lab write-ups (see below). This is a great way to prepare for the quiz and to ensure you come to lab prepared for the day's activities.

Pre-Labs:
For lab exercises 3, 4, 5, and 6 from our lab manual, I encourage you to prepare for the lab ahead of time by completing a Pre-Lab. This will help you get started on your lab report, and I will offer 2 Extra Credit points for each Pre-Lab you show me (through your phone, computer, or tablet) at the start of that day's lab. The Pre-Lab will consist of the first three graded parts of your final lab report (Descriptive title, Purpose, Materials and Methods). You can receive a total of 6 pts EC if you complete Pre-Labs for all four of the above-mentioned labs. An example pre-lab is provided in Lamakū Resources.

TENTATIVE COURSE SCHEDULE

The following schedule may be subject to change. Please consult the Academic Calendar for important dates throughout the fall term.

Week 1: Aug 25
Introductions, expectations, and lab safety

Week 2: Sept 1
Handout A: Analyzing a Scientific Paper DUE Sept 8 before lab (at 1:29 PM)

Week 3: Sept 8
Handout B: Measurements and Excel DUE Sept 15 before lab

Week 4: Sept 15
Handout C: Biomolecules DUE Sept 22 before lab
Pre-lab quiz 1

Week 5: Sept 22 *Pre-Lab EC
Handout D: Cells and Microscopes (Lab 2 in your Lab Manual) DUE Sept 29 before lab

Pre-lab quiz 2

Week 6: Sept 29*Pre-Lab EC
Lab 3: Diffusion and Osmosis (Lab 3 in your Lab Manual) Lab Report 1: Diffusion and Osmosis DUE Oct 6 before lab
Pre-lab quiz 3

Week 7: Oct 6 *Pre-lab EC
Lab 4: Enzymes (Lab 4 in your Lab Manual) Lab Report 2: Enzymes DUE Oct 13 before lab
Pre-lab quiz 4

Week 8: Oct 13 *Pre-lab EC
Lab 5: Cell Fermentation (Lab 5 in your Lab Manual) Lab Report 3: Cell Fermentation DUE Oct 20 before lab
Pre-lab quiz 5

Week 9: Oct 20 *Pre-lab EC
Lab 6: Photosynthesis (Lab 6 in your Lab Manual) Lab Report 4: Photosynthesis DUE Oct 27 before lab
Pre-lab quiz 6

Week 10: Oct 27
Handout E: Mitosis and Meiosis (Lab 7 in your Lab Manual) DUE Nov 3 at 1:29 PM
Pre-lab quiz 7

Week 11: Nov 3 Holiday go Vote!

Week 12: Nov 10
Lab 7: Microbiology and Molecular Biology Lab I (Handout)
Pre-lab quiz 8

Week 13: Nov 17
Lab 7 cont'd: Microbiology and Molecular Biology Lab II (Handout)
Pre-lab quiz 9

Week 14: Nov 24
Lab 7 cont'd: Microbiology and Molecular Biology Lab III (Handout)
Pre-lab quiz 10

Week 15: Dec 1
Work on ePoster Presentation; ePoster Presentation First Draft DUE at end of lab!

Week 16: Dec 8
Final ePoster Presentations in STEM Center*

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)

UH Executive Policy 2.220 Artificial Intelligence

The Windward CC Library AI Essentials Library Guide provides guidance and has helpful resources for both instructors and students.

The goal of this course is to give you the background and skills to think critically about the scientific method and the fundamentals of biology. Assignments are designed to assess your individual mastery of these skills, guide you through interpreting data, and help you communicate what you've learned through written lab reports and presentations.

While we cannot prevent AI usage, relying on it undermines the cognitive process this course is built around. AI models are trained on varied datasets and can produce results that are inaccurate, fabricated, or outdated. They also cannot share in the firsthand experience of performing experiments or verifying data in person — experience that is central to scientific work.

If you choose to use AI, you are responsible for the following:

- ***Verification:*** You must verify the accuracy of all submitted content. Never assume AI data is correct.
- ***Scientific Reasoning:*** Your work must reflect your own ideas and critical-thinking skills. Understanding and intention come from working through the problems and data yourself, and avoiding this could render your methods meaningless.
- ***Ethics & Integrity:*** You must be mindful of how AI usage can coincide with scientific ethics. Do not input sensitive data or proprietary information into AI tools. Avoid using AI in a way that will generate falsified or fabricated results.

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 Rachel Jacobson (abbascia@hawaii.edu), the STEM Liaison from the Library Staff Directory page
        - The Biology & Marine Biology LibGuide: BIOL 171L LibGuide
- Library Research Units (LRUs)
- Ka Piko Tutoring Services: Math Lab, Speech Lab, Writing Lab, ʻŌlelo Hawaiʻi 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 Laʻakea 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 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. For more information, see the University of Hawai'i 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 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, 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 Universityʻs 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.