

MICR 140L GENERAL MICROBIOLOGY LABORATORY

2 Credits (CRN64438)

TR, 10:00 – 11:40 am, Hale 'Imiloa 106

INSTRUCTOR:	Hongwei Li Ph.D.
OFFICE HOURS:	Thursday 12:00 – 1:00 pm, walk-in or by appointment
OFFICE:	Hale 'Imiloa 107
TELEPHONE:	(808) 236-9104
EMAIL:	hli@hawaii.edu
EFFECTIVE DATE:	Fall 2018

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

Laboratory course illustrating fundamental techniques and concepts of microbiology, such as microscopic observations, aseptic transfer, microorganism classification and identification, environmental factors influencing microbial growth, biochemistry of microorganisms, ecological microbiology, and medical microbiology. This course is designed to complement MICRO 130. Primarily for students in nursing, dental hygiene, biotechnology, ethnopharmacognosy, and nutrition.

Activities Required at Scheduled Times Other Than Class Times

- Read assigned lab materials prior to class sessions.
- Write lab reports in a scientific format.

Requirement course satisfies:

- DY for AA in Liberal Arts
- Required course for Certificate of Achievement in Agripharmatech
- Elective for AS in Natural Sciences

STUDENT LEARNING OUTCOMES

- Operate equipment used in microbiology laboratory
- Prepare growth media
- Perform aseptic transfer
- Identify microorganisms using morphological and physiological tests
- Follow biosafety procedures
- Produce lab reports using the standard scientific format

COURSE TASKS, ASSESSMENTS AND GRADING

Course Tasks

- Class attendance is mandatory.
- Demonstrate knowledge and skills of basic microbiology laboratory.
- Participate group research projects.
- Complete exams/quizzes/homework assignments and review study guides

Assessments

- **Laboratory Participation**

You are required to actively participate in all lab activities, and expected to work, as an individual or in groups, safely and efficiently in the laboratory. You will be graded on laboratory attendance, level of participation, and performance in laboratory practices. Because of difficulties in setting up laboratory materials, some scheduled laboratory activities cannot be given an alternative assignment for making up if you miss those labs. Failure to participate in a scheduled laboratory session, or its approved make-up activity, will result in a **4 POINT DEDUCTION** for each session missed (without doctor's note or formal notification).

- **Laboratory Reports**

A laboratory report should contain following sections, *Title, Introduction, Procedure, Results, and Discussion/Conclusion*. All reports must be completed and submitted before or on due dates.

- **Lab quizzes /Assignments**

There are five pre-lab quizzes / assignments, and the quiz time will be announced at least one week ahead.

- **Scientific report**

Completion of a scientific report on a course-based research project: you are required to conduct research on a given topic and write a scientific report.

- **Exams**

There are a total of three exams (two midterms and one final), and the format of exams includes Multiple Choice, Fill-in-the-blank, Matching, short answers, and hands-on tests. Make-up midterm exams will be permitted only when there is a legitimate excuse (such as illness or emergency; doctor's note is required). **No early or make-up exam for the final.**

Grading

Laboratory participation and performance	50	points
Lab reports (2)	50	points
Quizzes/assignments (5)	100	points
Scientific Report (1)	50	points
Exams (3)	300	points

Total	550	points
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- Grading is based on the percentage of total points earned. Final Grades will be assigned as follows:

A	90 – 100%	B	80 - 89%	C	70 - 79%
D	60 - 69%	F	Below 60% of total points		

I (incomplete) grade is given at the instructor's option when a student has failed to complete a small part of a course because of circumstances beyond his or her control. It is **your responsibility** to contact the instructor to make up the incomplete work with a minimum level (or better) of achievement. 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.

LEARNING RESOURCES

Lab materials: <https://laulima.hawaii.edu/>

DISABILITIES ACCOMMODATIONS

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Ākoakoa 213 for more information.

TITLE IX

Title IX prohibits discrimination on the basis of sex in education programs and activities that receive federal financial assistance. Specifically, Title IX prohibits sex discrimination; sexual harassment and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault; sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: https://windward.hawaii.edu/Title_IX/.

Windward Community College is committed to the pursuit of equal education. If you or someone you know has experienced sex discrimination or gender-based violence, Windward CC has resources to support you. To speak with someone confidentially, contact Karla Silva-Park, Mental Health Counselor, at 808-235- 7468 or karlas@hawaii.edu or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235- 7354 or kaahualo@hawaii.edu. To make a formal report, contact the Title IX Coordinator at 808-235-7393 or wcctix@hawaii.edu.

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 use of quotes or summarizing with reference to the original author.

Students can upload papers to <http://www.TurnItIn.com> to have papers checked for authenticity, highlighting where the paper potentially fails to appropriately reference sources.

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.

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: Alakai 121
 Phone: 808-235-7422
 Email: wccaa@hawaii.edu

LAB SCHEDULE

Date	Lab Topic
08/21	Introduction and biosafety
08/23	Ubiquity of microorganisms and cultural characteristics of bacteria
08/28	Compound microscope
08/30	Preparing a wet mount / Phase-contrast microscopy
09/04	Aseptic techniques / Bacterial culture transfer
09/06	Preparation of smears and simple staining
09/11	Gram staining
09/13	Capsule stain and endospore staining
09/18	Acid fast staining / Lab practice review
09/20	EXAM 1
09/25	Preparing and dispensing media /Sterilization
09/27	Plate streaking and pure culture
10/02	Serial dilution of bacterial culture and spreading plate
10/04	Oxygen and the bacterial growth
10/09	Effects of temperature and UV radiation on bacterial growth
10/11	Effects of disinfectants, antiseptics and antibiotics on bacterial growth
10/16	Exoenzymes
10/18	Carbohydrate test
10/23	Urea test and nitrate reduction test
10/25	Bacterial transformation
10/30	Bacterial transformation / Lab Practice Review
11/01	EXAM 2
<i>11/06</i>	<i>Holiday</i>
11/08	Fungi and Algae
11/13	Bacteria of the mouth /Dental caries susceptibility
11/15	Bacteria of the skin and throat
11/20	Bacteria of the intestinal tract
<i>11/22</i>	<i>Holiday</i>
11/27	Identification of unknown bacteria / Research project
12/29	Identification of unknown bacteria / Research project
12/04	Identification of unknown bacteria / Research project
12/06	Group Research Presentation
12/11	FINAL EXAM (10:00 am - 12:00 pm)

(Please note that this schedule is subject to change)