

## MICR 140L GENERAL MICROBIOLOGY LABORATORY

2 Credits (CRN60378)

TR, 10:00 – 11:50 am, Hale 'Imiloa 106

<b>INSTRUCTOR:</b>	Hongwei Li Ph.D.
<b>OFFICE HOURS:</b>	Thursday 12:00 – 1:00 pm, walk-in or by appointment
<b>OFFICE:</b>	Hale 'Imiloa 107
<b>TELEPHONE:</b>	(808) 236-9104
<b>EMAIL:</b>	hli@hawaii.edu
<b>EFFECTIVE DATE:</b>	Spring 2019

### 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 in group-based projects.
- Complete exams/quizzes/homework assignments and review study guides

### Assessments

- **Lab 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 worksheets submitted.
- **Lab Report**  
A laboratory report should contain following sections, *Title, Introduction, Procedure, Results, and Discussion/Conclusion.*
- **Assignments /Pre-lab quizzes**  
There are 10 pre-lab quizzes / assignments. The test/due dates will be announced via email.
- **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).

### Grading

Laboratory participation	50	points
Lab report	50	points
Quizzes/assignments (10)	200	points
Exams (3)	300	points
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Total	600	points

- 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](mailto: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/](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, WCC has resources to support you. To speak with someone confidentially, contact the Mental Health & Wellness Office at 808-235- 7393 or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235-7354 or [kaahualo@hawaii.edu](mailto:kaahualo@hawaii.edu). To make a formal report, contact the Title IX Coordinator, Karla K. Silva-Park, at 808-235-7468 or [karlas@hawaii.edu](mailto:karlas@hawaii.edu).

## 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](mailto:wccaa@hawaii.edu)

## LAB SCHEDULE

<b>Date</b>	<b>Lab Topic</b>
01/08	Introduction and lab safety
01/10	Ubiquity of microorganisms and cultural characteristics of bacteria
01/15	Compound microscope
01/17	Preparing a wet mount / Phase-contrast microscopy
01/22	Aseptic techniques / Bacterial culture transfer
01/24	Preparation of smears and simple staining
01/29	Gram staining
01/31	Capsule stain and endospore staining
02/05	Acid fast staining / Lab practice review
<b>02/07</b>	<b>EXAM 1</b>
02/12	Preparing and dispensing media /Sterilization
02/14	Plate streaking and pure culture
02/19	Serial dilution of bacterial culture and spreading plate

02/21	Oxygen and the bacterial growth
02/26	Effects of temperature and UV radiation on bacterial growth
02/28	Effects of disinfectants, antiseptics and antibiotics on bacterial growth
03/05	Exoenzymes and carbohydrate test
03/07	Urea test and nitrate reduction test
03/12	Bacterial transformation
03/14	Bacterial transformation
03/19-21	<i>Break</i>
03/26	<i>Holiday</i>
<b>03/28</b>	<b>EXAM 2</b>
04/02	Fungi
04/04	Algae
04/09	Bacteria of the mouth /Dental caries susceptibility
04/11	Bacteria of the skin and throat
04/16	Bacteria of the intestinal tract
04/18	Scientific methods / Group projects
04/23	Identification of unknown bacteria / Research project
04/25	Identification of unknown bacteria / Research project
04/30	Identification of unknown bacteria / Research project
05/02	Group Research Presentation
<b>05/07</b>	<b>FINAL EXAM (10:00 am - 12:00 pm)</b>

(Please note that this schedule is subject to change)