

BIOL275 Cell and Molecular Biology

(CRN: 64350, Lecture / 3 Credits)
MW 10:00 am – 12:30 pm, Hale Imiloa 106

INSTRUCTOR:	Dr. Hongwei Li	
OFFICE:	Hale Imiloa 107	
OFFICE HOURS:	Monday 8:50 am – 9:50 am, walk-in or by appointment	
TELEPHONE:	236-9104	EMAIL: hli@hawaii.edu
EFFECTIVE DATE:	Spring 2017	

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 O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Integrated cell and molecular biology for life science majors. Modern advances in recombinant DNA technology (3 hours lecture).

Pre-Requisite(s): "C" or better in BIOL171/171L and CHEM 272/272L or consent of instructor.

Co-Requisite(s): BIOL275L or consent of instructor.

STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

- Describe the principles of cytology including cell organization, structures and functions.
- Describe cell biochemistry including macromolecules of the cells, enzymes, membrane transport, cell signaling, and energy flow in cells during respiration and photosynthesis.
- Describe the principles of genetics including DNA replication, protein synthesis, mitosis, meiosis, genetic recombination and gene expression. Discuss traditional and *in vitro* plant propagation.

COURSE TASKS AND GRADING

- Class attendance is mandatory.
- Students must be able to access / utilize Lualima via the internet for this course.
- Students are expected to read the assigned chapters before coming to class.

Exams

- **Midterm Exams:** There are two midterm exams, and each includes contents from previous 8 - 9 chapters.
 - Make-up exam: make-up exam will be permitted only when there is a legitimate excuse (such as illness or emergency; doctor's note is required).
- **Final Exams:**
 - *No early or make-up exam for the Final.*

Quizzes /Assignments

- There generally will be 5 quizzes/assignments; late submission of assignments may result in point deduction.

Presentation

- Give a presentation on current topics in cell and molecular biology.

Class Attendance

- Extra credits will be given to those who have a perfect attendance.

Grading

Tasks	Possible Points
Midterm Exams (2)	200
Final Exam (1)	100
Quizzes /Assignments (5)	100
Presentation - current topics	50
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Total possible points	450

- 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	0 - 59%

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. The student is expected to complete the course by the designated deadline in the succeeding semester. If this is not done, the I grade will revert to the contingency grade identified by the instructor

LEARNING RESOURCES**Required Textbook**

- Becker's World of the Cell, Eighth Edition or Ninth Edition, by Jeff Hardin, Gregory Bertoni and Lewis J. Kleinsmith / Benjamin Cummings.

Lecture Materials

- <https://lailima.hawaii.edu>

DISABILITIES ACCOMMODATION STATEMENT

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 'Akoakoa 213 for more information.

Date	Chapter (8th ed)	Topic
01/09	1/2	A Preview of the Cell / The Chemistry of the Cell
01/23	3/4	The Macromolecules of the Cell / Cells and Organelles
01/30	5/6	Bioenergetics: the Flow of Energy in the Cell /Enzymes: the Catalysts of Life
02/06	7/8	Membranes /Transport Across Membranes
02/13		Exam 1
02/20		<i>Holiday, no class</i>
02/27	9/10	Glycolysis and Fermentation / Aerobic Respiration
03/06	11/12	Photosynthesis/The Endomembrane System & Peroxisomes
03/13	13/14	Signal Transduction Mechanisms: I/II
03/20	15/16/17	Cytoskeletal Systems / Cellular Movement: Motility & Contractility/ Beyond the Cell: Cell Adhesions, Cell Junctions and Extracellular Structures
03/27		<i>Spring Recess</i>
04/03		Exam 2
04/10	18/19	Chromosomes, and the Nucleus /Cell Cycle DNA Replication and Mitosis
04/17	20/21/22	Sexual Reproduction, Meiosis & Genetic Recombination/ Gene Expression
04/24	23/24	The Regulation of Gene Expression/ Cancer Cells
05/01		Current topics - Presentation
05/08		Final Exam (10:00 am - 12:00 pm)

(Please note that this schedule is subject to change)