

SYLLABUS

Physics 6B -- Physics for Life Science Majors: Waves, Electricity and Magnetism

Winter 2013, Lecture 1 & 2

Lectures: Mon/Wed/Fri PAB 1425
Lecture 1: 11:00-11:50PM Lecture 2: 12:00-12:50PM

Home Page: <https://ccle.ucla.edu/course/view/13W-PHYSICS6B-1>

Instructor: **Katsushi Arisaka**, Professor of Physics and Astronomy
Office: Knudsen Hall 4-145 Phone: (310) 825-4925
E-mail: arisaka.6b@gmail.com

Administrator: Elaine Dolalas, Student Affairs Officer
PAB 1-707D Phone: (310) 206-1447
E-mail: edolalas@physics.ucla.edu

Secretary: Cassandra Gonzalez
Knudsen Hall 4-144 Phone (310) 825-3441
E-mail: gonzalez@physics.ucla.edu

Text Book: Giancoli (9780558824518) Forth edition
Physics for Scientists & Engineers
Volume 1 (Chapter 14 – 16)
Volume 2 (Chapter 21 – 31)

Supplement: Physics 6B Laboratory Workbook
Mastering Physics

Grading:

| | |
|-------------|-----|
| 1st Midterm | 10% |
| 2nd Midterm | 15% |
| Final | 45% |
| Lab | 15% |
| Home works | 15% |

Exams: There are no make-up exams. The exams will contain only material presented in class by the instructor.

Home Works There will be Web-based Homework every week from Mastering Physics. Due on Monday at 2 am.

Course Outline

| | <u>Week</u> | <u>Chapter</u> | <u>Topics</u> |
|----|------------------------|--------------------------------------|--|
| 1 | Jan. 7, 9, 11 | 14 | Oscillations |
| 2 | Jan. 14, 16, 18 | 15 | Wave Motion |
| 3 | Jan. 23, 25 | 16 | Sound |
| | <i>Review:</i> | <i>Thursday, Jan. 24 6-8PM (TBA)</i> | |
| | First Midterm: | Monday, Jan. 28 in Class | |
| 4 | Jan. 30, Feb. 1 | 21 | Electric Charge and Electric Fields |
| 5 | Feb. 4, 6, 8 | 22-23 | Gauss's Law, Electric Potential |
| 6 | Feb. 11, 13, 15 | 24-25 | Capacitors, Current |
| 7 | Feb. 20, 22 | 26 | DC Circuits |
| | <i>Review:</i> | <i>Thursday, Feb 21 6-8PM (TBA)</i> | |
| | Second Midterm: | Mon, Feb. 25 in Class | |
| 8 | Feb. 27, Mar. 1 | 26- 27 | Circuits, Magnetic Force and Magnetic Field |
| 9 | March 4, 6, 8 | 28-29 | Source of Magnetic Field, Faraday's Law |
| 10 | March 11, 13, 15 | 30, 31 | Inductance, AC Circuits, Maxwell's Equations |

Review: *Thursday, March 7 6-8PM (TBA)*
Thursday, March 14 6-8PM (TBA)

Final Exams **Wed, March 20, 8 – 11 AM**

Academic Holidays: *Martin Luther King Day* Monday, January 21
Presidents' Day Monday, February 18

6B LABORATORY SCHEDULE

(REVISED ON JAN 8, 2012)

| <u>WEEK OF</u> | <u>EXPERIMENT</u> |
|-------------------------------|--|
| JANUARY 7-11..... | ORIENTATION & DRIVEN HARMONIC OSCILLATOR |
| JANUARY 14-18 | STANDING WAVES |
| JANUARY 21 (MON)..... | MARTIN LUTHER KING, JR. HOLIDAY |
| JANUARY 22-25 (TUE-FRI)..... | NO MEETING |
| JANUARY 28 - FEBRUARY 1..... | ELECTROSTATICS |
| FEBRUARY 4 - 8..... | VAN DE GRAAFF |
| FEBRUARY 11-15..... | ELECTRICAL CIRCUITS |
| FEBRUARY 18 (MON)..... | PRESIDENTS' DAY HOLIDAY |
| FEBRUARY 19-22 (TUE-FRI)..... | NO MEETING |
| FEBRUARY 25 - MARCH 1..... | THE CHARGE-TO-MASS RATIO OF THE ELECTRON |
| MARCH 4 - 8 | MAGNETIC FIELDS OF COILS AND FARADAY'S LAW |
| MARCH 11-15 | NO MEETING |