

Course Instructor: Prof. Jelena Maricic (jelena@phys.hawaii.edu, WAT-311)
Tel: (808) 206-1742
Office hours: Tuesday and Thursday after class,
per appointment: in-person or on zoom

Textbooks: UNIVERSITY PHYSICS Volume 2 (Chaps. 21-34),
15th Edition, by Young and Freedman, Pearson

Course Website: <https://laulima.hawaii.edu>

Lecture slides and any other relevant material will be posted on Laulima.

The Laulima course space is being shared by students in the following CRNs[73701, 75416, 75417, 71238, 75418, 75419] and if you do not wish to be in a shared course space, please drop this section and register for another section or alternate course."

Learning Outcomes

On completion successful students will be able to:

- a) Demonstrate mastery of problem solving skills in general
- c) Understand the basic principles of electricity, magnetism and geometric optics:
Coulomb's Law, Gauss's Law, electric field, electric potential, electric potential energy, capacitors and circuits, magnetic field, Ampere's Law, Faraday's Law, concepts of geometric optics, mirrors, lenses, and their applications.
- d) Develop a comprehension of the current basis for application of fundamental physics principles in other fields.

NOTES:

Lectures will be held every Tuesday and Thursday in WAT 112.

Preparation prior to EACH course session:

- a) Read the relevant sections in the textbook.
- b) Review problems (by doing them by yourself independently) discussed in the previous lecture session.
- c) Review examples in the textbook, for the material covered in previous lecture.

Homework:

Homework will be assigned from the Mastering Physics website (required) for each chapter.

Deadline extended under special circumstances, upon request.

Mastering Physics course code: **maricic99087**

You are strongly encouraged to **first attempt to solve each homework problem by YOURSELF, individually, prior to seeking help online, from a tutor or other students. THIS IS THE BEST WAY TO PREPARE FOR MIDTERMS AND FINAL EXAM.**

You are allowed 30 attempts for each answer – this is the maximum allowed by Mastering Physics.

Although this is an online homework, it is strongly recommended that notes on solving each homework problem using usual practices (listing known and unknown variables, diagram, formulas and units for final answers) are kept in orderly fashion as they represent excellent review material for midterms.

Homework late policy

There is 5% penalty for every day that homework is late, but it will not fall below 50%.

iClickers (required): mobile devices with iClicker app installed or iClicker remotes. They will be used for in - class quizzes and questions.

<https://app.reef-education.com/#/login>

Join link (9:00am session): <https://join.iclicker.com/BRK7U>

Join link (10:30 am session): <https://join.iclicker.com/4EXBL>

QUIZZES: Students use ONLY iClickers for the in-class quizzes. These quizzes last approximately 15 minutes and consist of 3-6 multiple choice questions (A...E or A...D for most questions, and True/False for others) that can be answered in 2-3 minutes: either conceptual or simple calculation problems. Quizzes will take place at the beginning of lectures from time to time, to check the student preparation for the class.

In-class 2-minute problems are of a conceptual nature involving application of principles being discussed in each lecture. The questions are multiple choice, very similar to the quizzes.

The same grading scheme is used for 2-minute problems and for quizzes: 1 points for a correct answer; 0.25 point for an incorrect answer (for participation and effort).

MIDTERMS: Two midterms will be given during the term. If you miss a midterm and have a documented, valid reason for doing so, please notify me by email as soon as possible. You should state in writing why you missed a midterm (the fill-out form is at the end of the syllabus) and email it to me. A single make-up midterm with material covering chapters 21-30 will be given toward the end of the term. In case that no form is received, a score of zero will automatically be assigned for the missed midterm.

TENTATIVE MIDTERM SCHEDULE

WEEK	Date/Time	
7	Thur. (may change) 10/06/2022	During class time
12	Thur. (may change) 11/10/2022	During class time

FINAL EXAM: The final exam is comprehensive – it will be based on all the subject material covered in the course. However, the material covered during the second half of the term is given more emphasis.

Grading: The final course grade will be based on the following weights.

Quizzes	15%
Mastering Physics Homework	15%
Midterm 1 + Midterm 2 + Final Exam*	20% + 20% + 30%
In-class 2-minute problems	5% EXTRA CREDIT

Grade assignment guidelines:

- A 90-100
- B 80 - 90
- C 70-80
- D 60-70
- F < 60

Minor adjustments to the grading scale are possible and will be applied as needed at the end of the term. Grades like A+, A-, B+, B-, C+, C-, D+, D- will also be assigned. The ranges for these grades will be determined at the end of the term, when the final grades are assigned, but no big changes are anticipated.

COURSE CALENDAR:

Note: Minor changes may be made to the syllabus whenever considered appropriate.

Week - 1

Lectures: Chapter 21
Electric Charge and Electric Field

Week – 2

Lectures: Chapter 22
Gauss's Law

Week – 3

Lectures: Chapter 23
Electric Potential

Week – 4

Lectures: Chapter 24
Capacitance and Dielectrics

Week – 5

Lectures: Chapter 25
Current, Resistance, and Electromotive Force

Week – 6

Lectures: Chapter 26
Direct-Current Circuits

Week – 7

Lectures: Chapter 27
Magnetic Field and Magnetic Force
MIDTERM I: Chapters 21, 22, 23, 24, 25;

Week – 8

Lectures: Chapter 28
Sources of Magnetic Field

Week – 9

Lectures: Chapter 29
Electromagnetic Induction

Week – 10

Lectures: Chapter 30
Inductance

Week – 11

Lectures: Chapter 31
Alternating Current

Week – 12

Lectures: Chapter 32
Electromagnetic Waves
MIDTERM II: Chapters 26, 27, 28, 29, 30;

Week – 13
Lectures: Chapter 33
The Nature and Propagation of Light

Week – 14
Lectures: Chapter 34
Geometric Optics

Week – 15
Lectures: Chapter 34 continued

Week – 16
Review

Academic Support

University of Hawai'i Online Learning Academy (all students)

- The [Online Learning Academy](#) (OLA) provides FREE, one-on-one English, math and science tutoring, by highly-qualified college tutors, for the University of Hawai'i (UH) System students statewide. They offer tutoring in the following subjects: basic math, pre-algebra, algebra, geometry, trigonometry, calculus, biology, chemistry, physics, environmental science, writing, and language arts.
- Drop-in hours with Learning Assistants that will provide help with homework problems. Help hours will start in one week and will be announced in class.

UH Mānoa

- [Hamilton Library](#)
- [Distance Learning at UH Mānoa](#)
- [Writing Center](#)

[Learning Assistance Center](#)

PERMISSION TO TAKE THE MAKE-UP MIDTERM

Name _____

(please print)

Student ID: _____

MIDTERM missed:
(circle one)

MIDTERM-I

MIDTERM-II

Reason for missing the midterm:

By submitting this form, I understand that if I miss the make-up midterm for any reason whatsoever my grade in the missed midterm will be zero.

Signature: _____