



General Physics II Lab
PHYS 2053
Spring 2021
January 11th – May 9th

Online Section

NO FINAL – unless you want one...

Welcome to PHYS 2053 – General Physics II Lab!

We will be performing simulations based on in-class laboratories.

- The experiment will be explained in the introduction of each assignment.
- You may turn in your laboratory any time prior to the due date of each laboratory assignment.
- The laboratory assignment must be completed and submitted to the course's Blackboard site.

**The lecture (PHYS 2052) is a separate course

INSTRUCTOR INFORMATION

Instructor: Nathan J. Dawson

Email: ndawson@hpu.edu

Office: AC 311A

Office Phone: 236-7909

Virtual office hours: Tues 12:00pm – 1:00pm, Wednesday 3:00pm – 4:00pm (see course Blackboard announcement for link to the Blackboard Collaborate Ultra virtual classroom link)

COURSE INFORMATION AND REQUIREMENTS

Course meeting times and location: All classes will meet in **AC 303 (Hawaii Loa Campus)**

Required Resources: Sovereign, grid lined lab book for backing up data. A personal computer to save relevant work from the simulations.

COURSE DESCRIPTION

Course Description: This is the online/simulations laboratory component of PHYS 2052. A physics lab is where the basic behavior of reality is studied by proscribing and conducting properly constructed simulation based on commonly performed experiments. Simulations in electromagnetism will be conducted and recorded in worksheets. The scientific method will be discussed in instructor and student discourse when the instructor is contacted for details regarding the work done through simulations and other activities.

Prerequisite: Completion of or concurrent enrollment in PHYS 2052.

Method of Instruction: This is a simulation (online) laboratory course

Learning Outcomes:

By the end of the course, students should be able to:

- Follow experimental procedures laid out for them.
- Describe the physics of basic electromagnetic systems.
- Communicate scientific observations from trusted online resources.
- Demonstrate competency with scientific set up and mathematical relationships.
- Learn to evaluate the quality of science being performed by a third party.

ASSESSMENT, GRADING SCHEME, and COURSE SCHEDULE

There are 13 labs, all related to carrying out experiment concerning the lecture material. Your grade will be based on the cumulative score of all laboratory worksheets. The points assigned to each completed laboratory assignment/worksheet are provided in the schedule. There are a total of 200 points. Therefore every 1 point is equivalent to 0.5% of the final cumulative score.

Grading scale:

A	92 – 100%
A–	90 – 91%
B+	87 – 89%
B	82 – 86%
B–	80 – 81%
C+	77 – 79%
C	72 – 76%
C–	70 – 71%
D	60 – 69%
F	0 – 59%

Course Schedule: (Student learning objectives for each chapter are assessed on the respective labs)

Date	Topic	Activities & Assignments
01/13	Overview of expectations; lab format; Online simulation lab	[18 points] Syllabus, safety agreements
01/20	Coulomb's law	[14 points] O-LAB 1 – Coulombs law
01/27	Equipotential and electric field lines	[14 points] O-LAB 2 – Electric field and electric potential
02/03	Electric field capacitance	[14 points] O-LAB 3 – Capacitors
02/10	Linear circuits of resistors	[14 points] O-LAB 4 – DC circuits and Kirchhoff's rules
02/17	Magnetic field lines	[14 points] O-LAB 5 – Magnetic field
02/24	Lenz's law	[14 points] O-LAB 6 – emf and magnetic induction
03/03	Inductor, resistance, capacitor circuits	[14 points] O-LAB 7 – LRC circuits
03/10	Spring break	No Lab
03/17	Doped semiconductors	[14 points] O-LAB 8 – Semiconductors
03/24	E/M waves from antenna sources	[14 points] O-LAB 9 – Electromagnetic waves
03/31	Behavior of light at interfaces	[14 points] O-LAB 10 – Reflection refraction and dispersion
04/07	Rays of light and imaging	[14 points] O-LAB 11 – Geometric optics
04/14	Interference of E/M waves	[14 points] O-LAB 12 – Double-slit interference
04/21	Spontaneous and stimulated emission	[14 points] O-LAB 13 – Lasers
04/28	Last day to turn in late work.	(Wednesday before finals week)

INSTRUCTOR POLICIES AND EXPECTATIONS

Attendance and Participation:

- Attendance in-person attendance is not required for this online laboratory section; however, assignments are expected to be completed and turned in via blackboard prior to the due date/time.
- Participation will be based on materials received by the instructor.

Instructor availability: I will be available in my office after each laboratory. If this is not an option, students are encouraged to visit any of the four office hours and send emails to me using ndawson@hpu.edu. I will check email at least once per day and respond as necessary within 48 hours. If you do not receive a response in this time-frame, please assume that I did not receive the email.

Make-up Work: All absences, periods of time when a student is unable to complete course work due to a reason such as illness, military duty, or family emergency, must be coordinated with the instructor. Students should make every effort to notify the instructor **PRIOR** to the absence. But if you can't (or don't), please notify the instructor as soon as possible after the absence. This record of absences will be important if an **incomplete** grade and course extension are necessary due to extended absences during the course. Contact me.

Late Work: Assigned work is due as noted on the schedule. Labs will be docked 1 point (out of 20 total points) for each day late.

Withdrawal: If you need to make any changes to your registration, including withdrawing from or adding courses, return to your HPU advisor for assistance.

For specific deadlines regarding dropping the course with a withdrawal "W" grade and with no GPA penalty, but possible loss of some or all of the tuition. Pay particular attention to the dates associated with withdrawing from the course. It could determine whether you get any tuition back in the event you need to drop the course.

Incomplete: Students who are unable to complete course requirements due to circumstances beyond their control (e.g. Military duty, illness, natural disaster ...) can make a written application to me with documentation for an incomplete "I" grade and complete the course requirements after the end of the course.

Extra Credit: **There is no extra credit in this course.**

Academic Honesty: All Students are expected to adhere to the University's policies regarding academic honesty. The policy of Hawai'i Pacific University is clear regarding academic dishonesty. Any student, who cheats on an academic exercise, lends assistance to others, or who hands in, as a completed assignment, work that is not his or her own will be penalized. The ultimate penalty is suspension from the University. The term "academic exercise" includes all forms of work submitted for points, grades, or credit.

Academic Honesty Policy:

http://www.hpu.edu/CourseSchedules/docs/FinalExams/Spring_2013_INTEGRITY_POLICY.pdf

TECHNICAL SUPPORT AND TUTORING OPTIONS

HPU's Online Help:

HPU Client Services at (808) 566-2411 or email: helpdesk@hpu.edu for technical assistance.

Campus Tutoring (tutoring@hpu.edu):

The Downtown CAS is located at 1060 Bishop Street (LB building), Floor 6. Tutoring is available in writing, modern languages, and math, accounting, business, science (MABS).

- This location operates on a walk-in, first-come first-served basis.

- Appointments are *only* taken for HPU students that work full-time, are active-duty military, have ADA status, or who want to see a Writing Mentor.

The Hawai'i Loa CAS is located in the Academic Center, 3rd Floor, Educational Technology Center (ETC). Tutoring is offered in select subjects.

- Operates by **appointment only**. Students can make appointments up to two weeks in advance, **ONLY one (1) appointment per subject per day**. For more information and for further assistance, please contact the Tutoring Center (Downtown) at (808) 544-9334.
- NEW!! Book HLC appointments online at: <http://www.genbook.com/bookings/slot/reservation/30196648>

Contact Information

Email: tutoring@hpu.edu

Phone