



General Physics II Lab
PHYS 2053
Spring 2022
January 10th – May 6th
Wednesday
12:00pm – 2:40pm
LAB – AC 303

NO FINAL – unless you want one...

Welcome to PHYS 2053 – General Physics II Lab!

We will be using standard lab practices

- Experimental goals will be presented at the BEGINNING of each in-class laboratory assignment.
- You will be given the rest of the period to meet these goals and record your observation for all laboratory assignments.
- The laboratory assignments will be due on their assigned dates on 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

Office hours: Tues 10:05am – 11:05am, Wed 10:55am – 11:55am, Thurs 10:05am – 11:05am

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 can be purchased on or off campus.

COURSE DESCRIPTION

Course Description: This is the laboratory component of PHYS 2050. A physics lab is where the basic behavior of reality is studied by proscribing and conducting properly constructed experiments. Experiments in electricity, magnetism, and optics will be conducted and recorded. The scientific method will be discussed in instructor and student discourse.

Prerequisite: Completion of or concurrent enrollment in PHYS 2052.

Method of Instruction: This is a hands-on 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 mechanical systems.
- Communicate scientific observations.
- 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 12 in-person laboratory assignments and 1 simulation laboratory assignment, all related to carrying out experiments concerning the lecture material. Your grade will be based on the cumulative score of all laboratory assignments. 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
01/12	Overview of expectations; lab format; Online simulation lab assignments	[10 points] Syllabus, safety agreements (<i>deadline 01/19</i>)
01/19	Conduction, induction, and the Coulomb force	LAB 01 – Electrostatic charge
01/26	Equipotential and E-field mapping	LAB 02 – Equipotential and electric field lines
02/02	Linear circuits of resistors	LAB 03 – Kirchoff's rules
02/09	Resistor and capacitor series circuit <i>Deadline is beginning of lab 02/09</i>	LAB 04 – Charging capacitors [45 points] Turn in consolidated lab worksheet (1-3)
02/16	Mapping magnetic field lines	LAB 05 – Magnetic field lines
02/23	Time changing magnetic flux	LAB 06 – Lenz's law
03/02	Phasors and resonance of LRC circuits <i>Deadline is beginning of lab 03/02</i>	LAB 07 – LRC circuits [45 points] Turn in consolidated lab worksheet (4-6)
03/16	Mutual- and self-inductance	LAB 08 – Transformers
03/23	Electronic switches and amplifiers	LAB 09 – Transistors and amplifiers
03/30	Light reflection and refraction <i>Deadline is beginning of lab 03/30</i>	LAB 10 – Snell's law and total internal reflection [45 points] Turn in consolidated lab worksheet (7-9)
04/06	Ray optics and imaging	LAB 11 – Imaging with lenses
04/13	Interference and diffraction	LAB 12 – Single slit and double slit experiment
04/20	Light amplification by stimulated emission of radiation	LAB 13 – Lasers (simulation)
04/27	<i>Deadline is beginning of lab 04/27</i> <i>04/27 is the last day to turn in late laboratory assignments</i>	[55 points] Turn in consolidated lab worksheet (10-13)

INSTRUCTOR POLICIES AND EXPECTATIONS

Attendance and Participation:

- One must attend to do each lab.
- Each student will keep their own lab journal (or electronic journal) containing data taken from each experiment.
- Participation will be assessed throughout the lab by interaction with the instructor. When asked: "What have you discovered?" or "What have you learned?" A response is required.

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 and inquire again.

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 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.

Bookstore: Books are available at the HPU Bookstore at the campus where this course is offered (Downtown or Hawaii Loa) and online (all campuses) at www.hpu.bncollege.com. Rentals and eBooks are available for many of the course materials. You can contact the HPU Bookstore at 808.544.0290 if you have any questions.

Accessibility Services (ADA Accommodations): Under the Rehabilitation Act of 1973 (Section 504), the Americans with Disabilities Act Amendments Act 2008 (ADAAA), and Title III (Public Accommodations) Hawaii Pacific University does not discriminate against individuals with disabilities. Any student who feels he/she may need an

accommodation based on the impact of a disability is invited to contact Accessibility Services at HPU (808-544-1197); at access@hpu.edu, or at the LB Bldg., Suite 602, 1060 Bishop Street). This is a necessary step in order to ensure reasonable accommodations in a course. Students are not expected to disclose their specific disability to the professor; Accessibility Services will provide a letter for an instructor explaining the accommodations and NOT the nature of the disability. If you would like to discuss other concerns, such as medical emergencies or arrangements in the event of an emergency evacuation, please make an appointment to talk with the professor as soon as possible.

Counseling & Behavioral Health Services (CBHS): CBHS provides current HPU students with free and confidential psychological counseling. Sometimes the stress of school along with personal issues can be too much to handle. CBHS provides the opportunity for students to discuss any personal problems or concerns and explore solutions. Appointments can be scheduled by phone at 808-687-7076 or in person at the Downtown campus at UB 905. Office hours are Monday–Friday, 8:00 a.m. to 5:00 p.m.

Military Veteran Center (MVC): MVC has one full time mental health provider from the Veterans Administration who offers confidential psychological counseling to military veterans. Sometimes, the transition from military to civilian life, managing school, and other personal issues can be challenging. MVC has an onsite provider at the downtown campus and appointments can be scheduled by phone at 808-763-7470. Office hours are Monday–Thursday, 8:00 a.m. to 5:00 p.m.

Title IX - Sexual Discrimination and Sexual Misconduct Policy: HPU is committed to providing an educational environment free from sexual discrimination. Students, faculty, and staff must report violations of sexual harassment, sexual assaults, stalking, domestic violence, dating violence, and retaliation to trigger corrective and preventative actions as well as victim support services. Victim support services include assistance with filing police reports, referrals to counseling and medical providers, assignment of a victim advocate, and assistance with academic accommodations. Faculty and students who become aware of such violations should contact the Title IX Coordinator (808-687-7014) or file an anonymous report using the Compliance Hotline (877-270-5054 or www.tnwinc.com/hpu). More details can be found at www.hpu.edu/studenthandbook.

Security & Safety: Help keep our campus safe and secure. For emergency situations, call 911; for non-emergencies, contact HPU security (808-544-1400). Timely reports of observations to security and the police can go a long way in preventing future crimes. Also, HPU security provides transportation or a walking escort at the Hawaii Loa campus, and a walking escort on the Downtown campus for anyone walking alone on foot to any university parking lot, facility or city bus stop. Call 808-236-3515 (Hawaii Loa) and 808-544-1400 (Downtown)—a security officer will be sent to your location. At military base locations, call Base Security at 808-474-2222. To receive critical information via text messaging, update your mobile number with Rave Alert (<http://phone.hpu.edu>), HPU’s emergency text program. Go to <https://www.hpu.edu/security/index.html> for more about campus security and emergency preparedness.

Vaccination Policy and COVID-19: All instructors teaching in person, and students participating in labs and boat activities must be vaccinated for COVID-19. Approved medical or religious exemptions must be on file with HR. Freshmen that are in the process of becoming vaccinated must present negative COVID test taken within 48 hours of lab start time. Testing locations are HLC AC front lanai, and Downtown at ATM.

Daily Health Screening Protocols: Students, faculty and staff must pass daily screenings in order to earn the “Green Check” that must be shown upon entry to labs, classrooms, or the shuttle van to the boat. Screens include 1) Daily Health Questionnaire (HPU App or website), 2) Daily temperature check (upon arrival to campus), and 3) your vaccine or COVID test status must be uploaded by an authorized representative.

Masks and Face Shields: Masks must be worn indoors at all times. The masks must fit snugly over the nose and cover the nose and mouth at all times. Masks with front vent are allowed as long as the filter is in place. Face shields are available in the CNCS offices for anyone who wishes to have an extra layer of protection. Eating and drinking in the classroom is prohibited. Students who remove masks during class may be asked to leave the classroom and forfeit any attendance or participation points for the day.

Absence Policy Due to COVID: Students with COVID symptoms should 1) not come to class 2) let their instructor know that they are absent with COVID symptoms, and 3) contact the HPU Health Center or your personal physician for a COVID test. In order for any absence to be “excused”, students must present evidence that they took a COVID test or communicated with a physician on the day that they missed class. Students with unexcused absences may not make up lab activities or in class assessments, including quizzes and exams.

COVID Case Reporting: Students and instructors should report known positive cases to the director of HPU Security, Sam Tong at stong@hpu.edu for contact tracing.

Tutoring:

Email: tutoring@hpu.edu

Phone: (808) 544-9334