

PHYS 170  
General Physics I  
Spring 2023

**Instructor:** Dr. Chad Junkermeier  
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**Lecture:** PHYSICI 217, 11:30 am - 12:20 pm MWF,

**Office Hours:** Wed 2:30 pm - 4:20 pm

**Final:** Friday, 12 May 2023, 12:00 – 2:00 pm

**Recitations:**

Section 001: T 12:30 pm - 1:20 pm, Watanabe, Rm. 113

Section 002: T 10:30 am - 11:20 am, PHYSICI, Rm. 317

Section 003: F 10:30 am - 11:20 am, PHYSICI, Rm. 112

Section 004: R 12:30 pm - 1:20 pm, Watanabe, Rm. 113

Section 005: R 10:30 am - 11:20 am, PHYSICI, Rm. 317

Section 006: R 10:30 am - 11:20 am, PHYSICI, Rm. 420

Recitations are based on the problem-solving method developed at the University of Minnesota (and used there for the past 30 years or so) in which students work in small groups to solve a “context-rich” problem. These problems are coordinated with the lecture topics on a weekly basis, but their main emphasis is teaching students to learn and apply an “expert” way of solving problems in physics.

In preparation for the recitation problem in a given week, one or two simple practice problems are assigned to the students during the preceding week, which problems are related to the upcoming recitation problem. The students’ solutions are submitted to the recitation TAs at the start of the recitation session, and are graded by the TAs on an effort-only basis.

**170L Labs:** The 170L labs are administered by a different professor. Your grade in there will not be reflected in this course.

If you have questions about the labs please see: <https://www.phys.hawaii.edu/~philipvd/>

[23\\_spring\\_intro\\_labs\\_uhm.html](https://www.phys.hawaii.edu/~philipvd/23_spring_intro_labs_uhm.html)

NO LABS OR RECITATIONS DURING THE FIRST WEEK OF THE SEMESTER.

**Course Description:** Calculus-based mechanics of particles and rigid bodies: kinematics, force, energy, momentum, rotation, gravitation, fluids, oscillations and waves. Intended for physical science and engineering majors. Pre: MATH 242 (or concurrent) or MATH 252A (or concurrent). MATH 216 may be substituted with consent.

**Required Text Book:**

- University Physics, by Young and Freedman, 15th edition, Chapters 1-16.

This course will be participating in the Bookstore’s Interactive Digital Access Program (IDAP). Through this program, you will access your course material Digitally via Laulima. Your content will be available by the first day of class. To set up your IDAP for the first time use the “VitalSource for UH Manoa IDAP” link in Laulima. If it asks you for a credit card you are doing something wrong.

A charge for the digital course material through IDAP will be added to your MyUH account. For more information regarding IDAP, please visit our IDAP info page: [https://www.bookstore.hawaii.edu/manoa/site\\_IDAP.asp](https://www.bookstore.hawaii.edu/manoa/site_IDAP.asp)

**Enable Popup windows:**

[courses.vitalsource.com](https://courses.vitalsource.com)

[openvillum.ecollege.com](http://openvillum.ecollege.com)

[plus.pearson.com](http://plus.pearson.com)

[tpi.bb.pearsoncmg.com](http://tpi.bb.pearsoncmg.com)

[login.pearson.com](http://login.pearson.com)

[mlm.pearson.com](http://mlm.pearson.com)

[session.masteringphysics.com](http://session.masteringphysics.com)

**Access Code:** If Pearson asks you for an access code, then it is likely that your web browser settings are a little restrictive, or that you need to clear the cache.

How to Clear Browser Cookies and Cache:

1. If possible, it is recommended to use Chrome or Firefox.
2. Clear the cookies and cache from the browser (CTRL+SHIFT+DEL while in a PC browser, CMD+SHIFT+DEL on a MAC ).
3. Close ALL browser windows.
4. Launch into the course and try again.

If errors persist, students should contact 24/7 Tech Support:

<https://support.pearson.com/getsupport/s/contactsupport>

### Supplies You Might Need:

- A scientific calculator is recommended-you will not be able to use your cell phone calculator during tests.
- Please bring a notebook and writing utensil to take notes in class.

**Learning Outcomes:** After successfully completing this course students will be able to:

- Formulate and use the scientific method.
- Develop analytical skills for problem solving.
- Survey a broad landscape of physical phenomena and descriptive models.
- Understand how diverse physical properties fit into unifying physical theories.

**Grading:** Your grades will be determined from your combined score on the homework, Student Examples, quizzes, and exams.

#### Grade Determination:

Homework	25%
Tests (Chapters 1-12)	45%
Recitations	10%
Final Exam (Chapters 13-16)	20%

#### Grading Assignment:

The letter grade will be assigned according to the tentative grading scale:

85 - 100%	A
70 - 85%	B
55 - 70%	C
40 - 55%	D
Below 40%	F

**Homework:** All homework problems with their due dates will be on the Pearson Mastering Physics website. Updates to the assigned problems or to the assignment due dates will be posted as needed and will be discussed in class. These assignments are related to topics covered in class of the current week and/or previous weeks. Late homework will be accepted for a week past the due date with **up to a 14% discount per day on only those problems that are late.**

I suggest you write out all of your homework in a notebook. Use full sentences to tell yourself what you were doing so you

can easily refer to your homework when studying for tests. Further thoughts on neatness can be found on the following webpages:

<https://www.purplemath.com/guidline.htm>,

<https://math.stackexchange.com/questions/393711/importance-of-neatness-organization-speed-in-math>,

<http://www.physics.montana.edu/classes/446/spring15/documents/syllabus.pdf>

I encourage you to work together, to teach, and learn from one another as you complete the homework.

**Block System:** We will have 2-week blocks, covering 2 chapters per block, with a quiz after each block.

**TESTS:** There will be no make-up tests. However, the test with the lowest score will be dropped. We will have special arrangements for students who are UH athletes or other university required absences. Pocket calculators are allowed, but no PCs, iPads, tablets, or smart phones.

**Weekly Engagement Question:** Some courses on campus have weekly engagement questions that you are supposed to answer on Laulima. We do NOT have those. You are expected to engage with the Pearson online homework weekly.

**Academic Honesty:** The student is expected to take tests without outside assistance. Any student caught cheating (or enabling another student to cheat) on a test will automatically receive a zero for that test and will be reported to the Office of Student Conduct. In all cases of cheating, the materials involved will be confiscated. Cheating is defined as (i) the use of any unauthorized aid during a test, (ii) obtaining help from another student during a test, (iii) knowingly giving aid to another student during a test, and (iv) duplicating or substituting another person's work as one's own work (plagiarism).

**Class Conduct:** The following rules constitute a minimum of expected behavior in class and will be enforced. Violation may result in your being asked to leave the class for the day and given an absence. Rules:

- Arriving late for class is distracting for other students and the instructor, so please be on time.
- Laptops and cell phones are discouraged in class. iPads for note taking are allowed.
- Eating and drinking in classroom is forbidden.
- CLASS ATTENDANCE IS HIGHLY RECOMMENDED. The in-class questions can only be answered if the student is present for the activity during the class session. If you cannot make it to class for whatever reason, make sure that you know what happened during the lecture that you missed.
- If you have to leave a class early, please be considerate and sit near the door.
- Be Honest, Respectful, and Prepared.

**Class Format:** Class time will be used to present and discuss material for the course. It is expected that students will be prepared for the scheduled lessons by reading assigned chapters. Students should participate as much as possible for the maximum benefit.

**Changes:** I reserve the right to modify any aspect of this syllabus at any time if I believe that such a change will allow the students in this class to better meet the course objectives.

**Campus Security: (808) 956-6911**

**Disabilities Accommodations Statement:** Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodations, please notify EEO/AA Office at (808) 956-7077 or [eeo@hawaii.edu](mailto:eeo@hawaii.edu).

**Student Code of Conduct:** UHM supports a positive educational environment that will benefit student success. In order to ensure this vision, UHM has established the UHM Student Code of Conduct to ensure the protection of student rights and the health and safety of the community, as well as to support the efficient operation of all programs. All currently enrolled students at UHM are required to abide by the UHM Student Code of Conduct. A copy of the most current Student Code can be found on the university's website: [http://www.studentaffairs.manoa.hawaii.edu/policies/conduct\\_code/](http://www.studentaffairs.manoa.hawaii.edu/policies/conduct_code/)

**TITLE IX:** The University of Hawaii is committed to providing a learning, working and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, sexual exploitation, gender-based harassment, domestic violence, dating

violence, and stalking. If you or someone you know is experiencing any of these, the University has staff and resources on your campus to support and assist you. Staff can also direct you to resources that are in the community.

**Assessment:** A sample of your work may be anonymously used to assess student achievement of the program learning outcomes for the General Education standards.

**Additional Title IX information:** Title IX prohibits discrimination on the basis of sex in educational programs and activities that receive federal funding. Specifically, Title IX prohibits sex discrimination; sexual harassment, and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault, sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: <http://www.hawaii.edu/titleix>

As a member of the University faculty, I am **expected to immediately report** any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

**Non-Discrimination Statement:** The University of Hawai'i System Executive Policy EP 1.204, declares and reaffirms its commitment to the University's equal education and employment opportunity policy. The University is committed to a policy of nondiscrimination on the basis of race, sex, gender, sexual orientation, age, religion, color, national origin, ancestry, handicap, domestic violence, marital status, arrest and court record, gender identity, and veteran status. This policy covers admission and access to, and participation, treatment, and employment in the University's programs and activities.

**UH Email:** Please check your hawaii.edu email daily. Instructors, administration and other campus programs will send important information frequently including notifications for class cancellations and important deadlines.

**Getting Help:** The following resources are available free-of-charge to current UH Manoa students:

- Physics Lab TAs (mostly graduate students in Physics) hold ~30 hours/week of drop-in office hours in Watanabe Hall Rm. 421 (our Physics Library & Study Center). Although lab TAs must give first priority to students with lab-related questions, they can also assist with lecture homework problems or other physics questions as time permits. Scroll halfway down this page for a master schedule of all TA names/days/hours: [https://www.phys.hawaii.edu/~philipvd/23\\_spring\\_intro\\_labs\\_uhm.html](https://www.phys.hawaii.edu/~philipvd/23_spring_intro_labs_uhm.html)
- The Natural Sciences Learning Emporium in Bilger Addition 209 is open daily for all students to seek free, drop-in assistance with lower-division math or science classes. Schedules of tutors for physics (coming soon) and other STEM subjects are posted online here: <http://uhnatsci.org/emporium/tutorschedules.php>
- The Learning Assistance Center offers free one-on-one tutoring by appointment for physics and many other introductory math & science courses. Make an appointment online at least 24 hours in advance: <https://manoa.hawaii.edu/undergrad/Learning/tutoring-by-appt/>
- The Housing Success Center is open Sunday–Thursday, 6:00–9:00pm, for free walk-in assistance for physics and other introductory math & science courses. Check their online schedule of tutors & subjects: <https://manoa.hawaii.edu/undergrad/Learning/walk-in-tutoring/>

**Schedule:**

	Week	Monday	CH	Monday	Wednesday	Friday
Block 1	1	9-Jan	1	CH1 Units, Vectors	CH1 Units, Vectors	CH1 Units, Vectors
Block 1	2	16-Jan	2	Martin Luther King Day	CH2 Motion in 1D	CH2 Motion in 1D
Block 2	3	23-Jan	3	CH3 Motion in 2D	CH3 Motion in 2D	CH3 Motion in 2D
Block 2	4	30-Jan	4	CH4 Newton's Laws	CH4 Newton's Laws	CH4 Newton's Laws
Block 3	5	6-Feb	5	<b>Test 1</b> (CHs 1-4; Feb 6)	CH5 Appl. of Newton's Laws	CH5 Appl. of Newton's Laws
Block 3	6	13-Feb	6	CH6 Work and Energy	CH6 Work and Energy	CH6 Work and Energy
Block 4	7	20-Feb	7	Presidents Day	CH7 Conservation of Energy	CH7 Conservation of Energy
Block 4	8	27-Feb	8	CH8 Momentum	CH8 Momentum	CH8 Momentum
Block 5	9	6-Mar	9	<b>Test 2</b> (CHs 5-8; Mar 6)	CH9 Rotation	CH9 Rotation
x	x	13-Mar		Spring Recess	Spring Recess	Spring Recess
Block 5	10	20-Mar	10	CH10 Dynamics of Rotation	CH10 Dynamics of Rotation	CH10 Dynamics of Rotation
Block 6	11	27-Mar	11	Kuhio Day	CH11 Equilibrium	CH11 Equilibrium
Block 6	12	3-Apr	12	CH12 Fluids	CH12 Fluids	CH12 Fluids
Block 7	13	10-Apr	13	<b>Test 3</b> (CHs 9-12; Apr 10)	CH13 Gravitation	CH13 Gravitation
Block 7	14	17-Apr	14	CH14 Periodic Motion	CH14 Periodic Motion	CH14 Periodic Motion
Block 8	15	24-Apr	15	CH15 Waves	CH15 Waves	CH15 Waves
Block 8	16	1-May	16	CH16 Sound	CH16 Sound	CH16 Sound
	17	8-May				<b>Final (CHs 13-16): 12:00--2:00 pm</b>