PHYS 170
General Physics I
Spring 2025

Instructor: Dr. Chad Junkermeier
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Section 001 Lecture: Watanabe Hall room 420, 9:30 am - 10:20 am MTWF
Section 002 Lecture: Watanabe Hall room 420, 10:30 am - 11:20 am MTWF
Student Hours: Watanabe Hall, Rm. 428, 1:30 pm - 4:30 pm T
Section 001 Final: Watanabe Hall room 420, Friday, 16 Dec 2024, 9:45 am – 11:45 am
Section 002 Final: Watanabe Hall room 420, Monday, 12 Dec 2024, 9:45 am – 11:45 am

Schedule:

Week	Monday	Monday	Tuesday	Wednesday	Friday
1	13-Jan	CH1 Units, Vectors	CH1 Units, Vectors	CH1 Units, Vectors +H0 due	CH1 Motion in 1D
2	20-Jan	MLK Jr Day (No Class)	CH2 Motion in 1D	CH2 Motion in 1D + H1 due	CH2 Motion in 1D
3	27-Jan	CH3 Motion in 2D	CH3 Motion in 2D	CH3 Motion in 2D +H2 due	CH3 Motion in 2D
4	3-Feb	CH4 Newton's Laws	CH4 Newton's Laws	CH4 Newton's Laws +H3 due	CH4 Newton's Laws
5	10-Feb	CH5 Newton's Laws	CH5 Newton's Laws	CH5 Newton's Laws +H4 due	Test 1 (CHs 1-4; Feb 14), +EC 1 due
6	17-Feb	Presidents Day (No Class)	CH6 Work and Energy	CH6 Work and Energy +H5 due	CH6 Work and Energy
7	24-Feb	CH7 Conservation of Energy	CH7 Conservation of Energy	CH7 Conservation of Energy +H6 due	CH7 Conservation of Energy
8	3-Mar	CH8 Momentum	CH8 Momentum	CH8 Momentum + H7 due	CH8 Momentum
9	10-Mar	CH9 Rotation	CH9 Rotation	CH9 Rotation + H8 due	Test 2 (CHs 5-8; Mar 14), +EC 2 due
	17-Mar	Spring Break (No Class)	Spring Break (No Class)	Spring Break (No Class)	Spring Break (No Class)
10	24-Mar	CH10 Dynamics of Rotation	CH10 Dynamics of Rotation	Kuhio Day (No Class) + H9 due	CH10 Dynamics of Rotation
11	31-Mar	CH11 Equilibrium	CH11 Equilibrium	CH11 Equilibrium + H10 due	CH11 Equilibrium
12	7-Apr	CH12 Fluids	CH12 Fluids	CH12 Fluids + H11 due	CH12 Fluids, + (H11 due)
13	14-Apr	CH13 Gravitation	CH13 Gravitation	Test 3 (CHs 9-12; Apr 16)+ H12 due + EC 4 due	Good Friday (No Class)
14	21-Apr	CH14 Periodic Motion	CH14 Periodic Motion	CH14 Periodic Motion +H13 due	CH14 Periodic Motion
15	28-Apr	CH15 Waves	CH15 Waves	CH15 Waves +H14 due	CH15 Waves
16	5-May	CH16 Sound	CH16 Sound	CH16 Sound +H15 due	Study Day (No Class)
17	12-May	May 12: Final Exam Section 002 (Cumulative): 9:45-11:45 am + E.C. 4			May 16: Final Exam Section 001 (Cumulative): 9:45-11:45 am + E.C. 4

170L Labs:

The 170L labs are administered by a different professor. Your grade in there will not be reflected in this course. NO LABS OR TUESDAY EXAMPLES CLASS 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 Textbook:

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 textbook and homework online. Help with accessing the course materials for the first time is listed below.

Setting Expectations: At universities across the nation, the calculus based introductory physics course is considered one of the most challenging classes many students will take. It is often a student's first introduction to the topics discussed and is paced to cover a significant amount of content in a very short period of time. The university expects that the average student will spend two hours outside of class for every hour in the classroom. This is a four credit course, thus the average student should expect to spend eight hours per week outside of class reading and studying the textbook and completing homework assignments. You may need more than eight hours.

Grading: Your grades will be determined from your combined score on the Homework, Friday In-class Problems, Reading Quizzes, Tests, and the Final Exam.

Grade Determination:

Homework	30%
Friday Problems	10%
Reading Quizzes	15%
Tests (Chapters 1-12)	30%
Final Exam (cumulative)	15%

Course Grades:

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

95 - 100% A+
90 - 95% A
85 - 90% A-
80 - 85% B+
75 - 80% B

70 - 75% B-
65 - 70% C+
60 - 65% C
55 - 60% C-
50 - 55% D+
45 - 50% D
40 - 45% D-
Below 40% F

Reading Quizzes:

- Reading quizzes will be given at the start of the first class of each week.
- The Reading Quizzes will cover topics from the chapter that will be covered that week.
- Each quiz will be about 5 minutes long.
- You must be in class and on time to take the quiz.
- **Unless you are on a university excused absence you must be in class to get credit for that week's Reading Quiz.**
- **The lowest score of the will be dropped.** Dropping the lowest a score allows for times when you can't make it to class.

Online Homework:

- Homework is on the Pearson Mastering Physics website.
- **Homework assignments are due at 8 AM each Wednesday morning.**
- **Late homework will be accepted for a week past the due date with up to a 14% deduction per day on only those problems that are late.**
- **Once the late homework period ends, homework will not be accepted**; this is in fairness to students who submitted homework before the deadline.
- Updates to assigned problems and/or 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. Homework problems have a mixture of conceptual and numeric answers. Many of the homework problems will be mathematically more difficult than exam questions. The reason for this is that in a timed exam it is unfair to ask that you spend 20 minutes solving a single problem.
- Please do not waste our time asking for an extension on the due date.

Friday In-Class Problems:

- Friday classes will be structured more like a recitations than a normal class and will be lead by a Teaching Assistant.
- During the first half of the Friday class period the TA will go over example problems that were not done in class.

- During the second half of the class students will be required to turn in a problem that is assigned in class that day, using the proper formatting (to be discussed in class).
- **Unless you are on a university excused absence you must be in class that Friday to get credit.**
- You may work in groups to do the problem, but you must turn in your own paper.
- **The lowest score of the In-Class Problems will be dropped.**
- Dropping the lowest score allows for times when you can't make it to class.

Midterm Tests:

- To receive a non-zero score on the test you must be in class that day. **There will be no make-ups and no taking the exam early.** The **only** exception to this policy includes special arrangements for students who are UH athletes or have other university required absences (e.g., UH Band, research conferences for your work with a professor, etc). Being sick is not a university required absence.
- KOKUA students can arrange to take the exams in the KOKUA offices.
- **The midterm test with the lowest score will be dropped.** Dropping a midterm allows for the individual experiences of students (e.g., being sick, family emergency, or other absence) while keeping the tests fair for all students.
- There will be three midterm tests.
- Dates of all exams are given in the calendar below.
- Each exam covers the chapters of the textbook since the last exam.
- Each exam will be in our classroom during the normal class time.
- Those who meet the university required absence requirement must: 1. tell me **at least a week in advance** (university policy); and 2. must have a university official that will proctor the exam while you are gone. If conditions 1 and 2 are not meet than you will be expected to take a zero.
- All midterm exams are implicitly cumulative.

Final Exam:

- **No early or late exams will be given.** You must be in the classroom during the university scheduled date and time. (Do not plan to go home before the exam.)
- The final exam is explicitly cumulative, though approximately half of the questions will be from the last four chapters.
- **The final exam cannot be dropped.**
- In accordance with university policy, students who have otherwise attempted all of the homework and tests, but find that they are sick, or have an emergency that I deem creditable, on the day of the final, may, with my approval, take an Incomplete grade for the course and take a **modified final** after the end of the semester.
- The modified final will be a mixture of multiple choice questions and open ended questions.

Rules for all Tests and the Final Exam:

- You MUST turn in the SCANTRON, as it is the official record of your answer.
- You will need a scientific calculator. Graphing capability is allowed but not required.

- **NO phones, tablets, computers, smart watches, earphones, or other devices are allowed.** Please remove them before coming into the classroom and do not put them back on until leaving the classroom on test days.
- **NO hats, hoodies, or sunglasses.**
- All other books, notes, handouts, or materials are forbidden.
- No collaboration. The exam must reflect your individual work.
- You may have one 8.5" x 11" sheet of paper (front and back) with hand written notes on it. Nothing can be printed off of a device. **The sheet must clearly be written in pencil or pen.**
- You receive ONE question's worth of points for correctly filling in your name (i.e., family name, given name) on the SCANTRON in PENCIL. If I find you have not done so correctly, these points will be deducted.
- Sit with at least one open space between you and the next person in the row.
- Keep all test materials on the desktop of the chair you are sitting in. If you are left-handed, please sit in a left-handed desk.
- **No bathroom breaks. To leave the classroom you must turn in your exam.**
- You must present your Student ID to the instructor in order to turn in your SCANTRON.

Rational behind Midterm Tests and Final Exam:

This is a physics course and not a mathematics course. Thus, while I require homework that also requires a lot of math, the test/exam problems will not usually be as mathematically difficult as many of the homework problems. Exams will focus on testing your understanding of concepts you are learning. Some questions will involve relatively simple math and some will be purely conceptual. All questions will necessitate a thorough examination of physics principles, while a minority will be of a straightforward "plug and chug" nature. Exam questions will be like those given in the homework and presented in class as Think-Pair-Share questions.

Extra Credit: There will be limited opportunity for extra credit. All extra credit listed below will be added to the homework grades. Planned extra credit includes:

- Exam Review Questions. Turned in via Pearson's Mastering Physics. Due on the day of the exam and no late work is accepted.

How to do well in the class:

- REQUIRED: *Read the textbook*. Time requirement: A few hours a week. Like MOST college courses we will not cover everything in class; there is just not enough scheduled in-class-time to cover all of the material. Even if I could covering everything, you should still read the book. Because you already have the book, I purposefully try not to do the examples from the book in class.
- REQUIRED: *Submit homework on time*. Time requirement: at least two hours per week (based on Pearson's statistics). Many students wait until the night before it is due. But you will learn and remember more of it if you do a few homework questions every day.

- REQUIRED: *Participate in class*. Time needed: four hours per week. I use active learning methods in class. Compared to sitting through a traditional lecture you may feel more like you are confused by the subject, but you have an opportunity to as questions to clarify your understanding. If I were to use a straight traditional lecture format you are more likely to sit in class and feel like you understand the subject and then find that you don't when you start the homework. Decades of research demonstrates that you will learn the material better from the active learning methods as compared to a straight lecture.
- *Make friends in class*. Your peers in class will be the most accessible and most understandable sources for help late at night. It is also nice to have friends.
- Do NOT use a calculator, app, or website to do algebra or calculus for you. Part of the purpose of this class is to make sure you are prepared for the MUCH more intense math of later classes.
- *Ask questions*. PLEASE, PLEASE, PLEASE, come ask question after class, in student hours, via email, or if you see me around campus.
- *Get help*. Regularly complete homework in one of the provided help settings. See below.

Supplies You Will Need:

- A scientific calculator is recommended-you will not be able to use your cell phone calculator during tests.
- 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.

University-Sponsored Event Absences:

For regularly-scheduled events, students are to notify instructors within the first two weeks of the semester. For special events or tournaments, students are to notify their instructors as soon as they learn of the anticipated absence. In both cases, students who must miss class for such events will be responsible for completing all assigned work as expeditiously as possible. **If you are going to be absent for a test or the final exam, you must email me at least a week in advance.**

Weekly Engagement Question: Some courses on campus have weekly engagement questions to answer in 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, may fail the course, 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-including an improper sheet of notes or more than one sheet of notes, (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).

Use of generative AI, websites like Chegg, CourseHero, or other websites that provides answers is strictly forbidden in this course. Submitting your exam to one of these websites after the fact is also forbidden. Doing any of the above may result in failing the course and being reported to the Office of Student Conduct. This includes using the AI homework help in Pearson's Mastering Physics.

You may:

- Discuss the homework with friends or family inside or outside the course as long as they are going off their personal knowledge (they can't check one of the banned sites for you).
- Discuss the homework with students in the class.
- Go to the library and use any and all physics text books to find the answer, or find how to do the problem.
- Get help from a TA.
- Get help from me.

Cheating on homework is not only cheating, but you will fail to learn the material. Failing to learn the material means you will do poorly on exams. Doing poorly on exams means you will get a bad grade in our class. Failing to learn the material also means that you will be ill-prepared for other classes and will likely not understand that material and do poorly in those classes.

Class Conduct: The following rules constitute a minimum of expected behavior in class.

- Arriving late for class is distracting for other students and the instructor, so please be on time.
- iPads for note taking are allowed. Laptops and cell phones are discouraged in class. Experience has demonstrated that students on laptops during class are not using them to take notes. If you are on a laptop or phone while in class you may be asked to leave.
- CLASS ATTENDANCE IS HIGHLY RECOMMENDED. We will be using active learning methods in class, part of which requires you to interact with your fellow students. If you cannot make it to class for whatever reason, make sure that you talk to a classmate to find out what happened during the lecture that you missed.

- **You are expected to sit near other students and participate in the active learning we do in class.**
- If you have to leave a class early, please be considerate and sit near the door.
- Be Honest, Respectful, and Prepared.

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.

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
- 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/
- Come to my Student Hours

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.

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/

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.

Accessing The Textbook online for the first time.

1. Enable popup windows.

courses.vitalsource.com

openvellum.ecollege.com

plus.pearson.com

tpi.bb.pearsoncmg.com

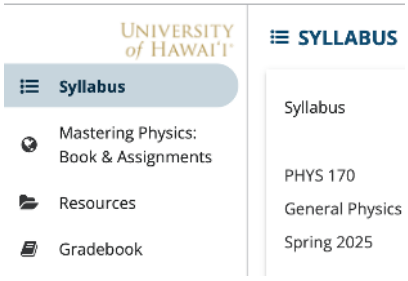
login.pearson.com

mlm.pearson.com

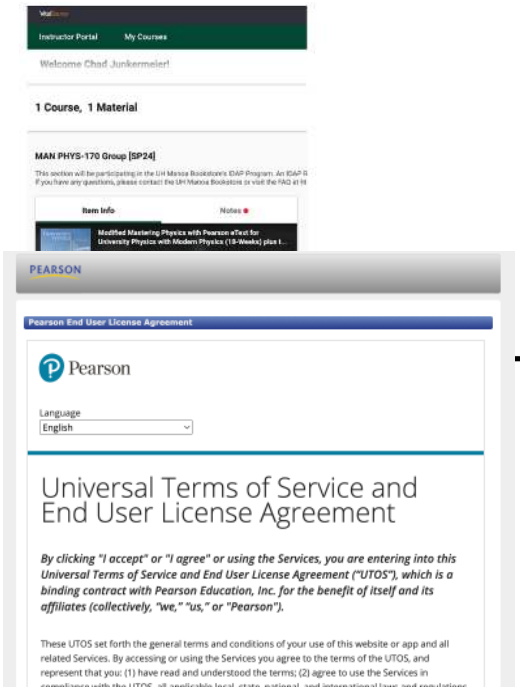
session.masteringphysics.com

https://session.physics-mastering.pearson.com/myct

2. Click on "Mastering Physics: Book & Assignments"



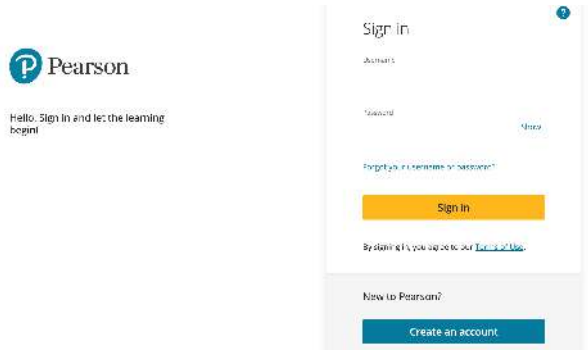
3. Click Launch Courseware



4. Accept the end user agreement

5. Create and account (Please use your name as it is given in Laulima).

I have to manually transfer grades from IDAP to Laulima in order to submit your final grades. If you use the same name both in IDAP and Laulima it helps me make sure you get the A+ grade you deserve.



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+SHFT+DEL while in a PC
3. browser, CMD+SHFT+DEL on a MAC).

4. Close ALL browser windows.
5. Launch into the course and try again.

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

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