

PHYS 0174: Fall 2021

Instructor: Prof. Andrew Mugler (he/him)
Office: 206 Allen Hall
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Website: canvas.pitt.edu
Book: *Fundamentals of Physics, 11th edition* by Halliday, Resnick, and Walker
Homework: Macmillan Learning Achieve (through Canvas)
In-class Q's: Top Hat (through Canvas or app)

Physics 0174 is the first term of a two-term calculus-based introductory lecture-demonstration sequence in physics primarily for students intending to major in a field of science or engineering. Calculus is used as needed and should be taken at least concurrently. This course fulfills one Dietrich School of Arts and Sciences Natural Science General Education Requirement.

Topics: kinematics, Newton's laws of motion, work, kinetic and potential energy, conservation of energy, linear momentum, conservation of linear momentum, rotational kinematics and dynamics, rigid body motion, conservation of angular momentum, gravitation, simple harmonic motion, and waves.

Learning Objectives

- Demonstrate understanding of the concepts, principles, and laws of physics covered.
- Describe a physical situation, as necessary, using multiple representations such as written conceptual statements, mathematical equations, diagrams, and graphs, and be able to translate from one representation to another.
- Perform a conceptual analysis of a problem and identify principles required to solve it.
- Translate physical principles to mathematical statements required to solve a problem.
- Apply mathematical concepts and methods such as algebra, differentiation, integration, trigonometry, and vector analysis as necessary to analyze and solve problems.
- Use physical reasoning and units to obtain order-of-magnitude estimates.

Times and Places

		First two weeks	Thereafter	
Lecture	MWF 10-10:50am W 11-11:50am	343 Alumni + https://pitt.zoom.us/j/98802502150 [passcode 0174]	343 Alumni	Prof Mugler UTA Jonna Rinehart
Recitations	W 1-1:50pm	https://pitt.zoom.us/j/95983959141 [passcode 0174]	105 Allen	TA Raphael Monroy
	W 2-2:50pm			
	Th 11-11:50am			
	Th 12-12:50pm			
	Th 1-1:50pm			TA Zhikang Zhou
Office hours	M 1:30-2:30pm	206 Allen		Prof Mugler
	Tu 1:30-2:30pm	https://pitt.zoom.us/j/8809402335		
	W 3:30-4:30pm	https://pitt.zoom.us/j/96487934423		TA Raphael Monroy
	Th 1:30-2:30pm	[passcode 0174]		
	Th 4:30-5:30pm	G10 Allen		TA Zhikang Zhou
	Fr 4:30-5:30	https://pitt.zoom.us/j/3758181159		
	W 9-10am	https://pitt.zoom.us/j/95499537271		UTA Jonna Rinehart
	F 8-10am	https://pitt.zoom.us/j/91437539380		

Policies

COVID-19: Pandemic policies are set at the University level. Because the pandemic is a fluid situation, all information in this syllabus is subject to change based on University guidance. The most up-to-date information is found at coronavirus.pitt.edu.

Attendance: Lecture attendance is a crucial component of this course. To that end, there will be graded in-class questions that require active participation. If circumstances require you to be unable to attend lectures in person, you are required to let me know so that alternatives to these assignments can be arranged.

Missed Assignments/Exams: By default, missed assignments (including exams) earn a zero grade. The one exception is that homework will be accepted late at a 20% penalty per day. If you are aware of an impending conflict with the scheduled time of an exam or other in-class assignment, you must let me know as early in the semester as possible. In these cases, accommodations will be provided as long as the circumstances are reasonable and you can provide appropriate documentation.

Electronic Communication: Students are expected to regularly check their pitt.edu email and to regularly sign on to Canvas. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of communications.

Academic Integrity: Students in this course will be expected to comply with the [University of Pittsburgh's Academic Integrity Code](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

Examples of violations that have been prosecuted in this course in the past include collaborating with another person during an examination (unless explicitly allowed), looking up answers to a graded assignment online (using Chegg or any other website), and submitting another person's work as one's own.

To learn more about Academic Integrity, visit the [Academic Integrity Guide](#) for an overview.

Disability Services: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and [Disability Resources and Services](#) (DRS), 140 William Pitt Union, (412) 648- 7890, drsrecep@pitt.edu, (412) 228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Title IX: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

As a professor I am a mandatory reporter, and I am required to report violations of Title IX that I observe or am made aware of to the [Title IX Office](#). Title IX violations include, but are not limited to, sexual harassment, sexual violence and verbal or sexual abuse. Within the classroom,

behavior in violation might appear as: suggestive jokes or innuendos, inappropriate touching, and unwanted sexual behavior or advances, but my capacity and obligation to report does not end at the classroom.

Grading

Grade Scale: Grades may be curved up depending on average exam scores. Grades will never be curved down. If you achieve the following final grade percentages in the course, you will receive at least:

Percentage	90%	80%	70%	65%	55%
Minimum grade	A-	B-	C	C-	D-

Grade components:

Assignment	Percentage
In-class questions	10%
Reading questions	10%
Homework	20%
Recitation quizzes	10%
Midterm exam 1	10%
Midterm exam 2	10%
Midterm exam 3	10%
Final exam	20%

In-class questions: In-class questions will occur throughout each lecture using Top Hat. You can access Top Hat through Canvas or using their mobile app. The University is already paying for Top Hat, so you do not need to pay anything extra. Grading will be 80% credit for participation, and 20% credit for correctness. The lowest 10 questions will be dropped.

Reading questions: Reading assignments from the textbook will precede each lecture. In Canvas, you will write one question that you had about the reading. Questions are due at **11:59pm the night before the lecture**. Common questions will be discussed in the lecture.

Homework: Weekly online homework will be assigned in Macmillan Learning Achieve (accessed through Canvas). Homework is due at **5pm on Fridays**. Each question allows 10 attempts without penalty. Unlike other assignments, homework may be completed late for reduced credit (20% penalty per day).

Recitation quizzes: At the end of most recitations, a short quiz will be administered, with the purpose of providing frequent feedback of your understanding. These quizzes will be open book/notes, and may be completed in groups.

Midterm exams: There will be three midterm exams held on **Wednesdays during lecture**. Each will be designed as a 50-minute exam, but you may take up to the full 110-minute Wednesday period to complete it. Midterm exams are completed individually with no outside resources.

Final exam: There will be a cumulative final exam during final exam week at a date and time to be determined, completed individually with no outside resources.