

PHYS 135, Spring 2023, Introduction to Physics I

Instructor: Dr. Wonhee Ko (203 South College/233 IAMM, wko@utk.edu)

General Information

Lecture Hours: 1:50 – 2:40 pm Mon/Wed/Fri.

Location: 304 Nielsen

Office Hours: Mon 10 –11 am, or email me anytime, will reply within 24 hours

Laboratory Hours: as scheduled for your section^[1]_{SEP}

Textbook: “College Physics”, a free, online textbook by OpenStax College (<http://openstaxcollege.org/>). The link to the HTML version is http://cnx.org/contents/Ax2o07U1@9.4:HR_VN3f7@3/Introduction-to-Science-and-th

A PDF copy of the book can be downloaded from the OpenStax website or from Canvas in the folder “files” of this course website

Self-learning materials: <http://labman.phys.utk.edu/phys135/>

Homework

One homework will be given for each chapter, when the homework will be assigned and when it will be due will be announced on Canvas.

Due dates for problem sets are firm. Please note: No extensions or make-up problem sets will be given. I generally encourage students to work together as far as homework is concerned. The goal is to use homework as one of the most effective ways of assimilating the material. Do not take advantage of the work of other people, and do not let anybody take advantage of your own work: efforts should be shared.

Class attendance is expected.

Laboratory attendance is strictly mandatory. Work will be graded by each Lab Instructor independently. An effort will be made to ensure a uniform grading policy between different laboratory sections. Laboratory make-ups are entirely at the Lab instructor’s discretion and arrangements for such must be made with the Lab instructor directly. The laboratory exercises are an important and integral part of this course and have to be completed before a final grade will be assigned. You must complete all of the Laboratory assignments. Please note: If you fail the Laboratory part of the course, you automatically fail the entire course. You find the laboratory schedule here: <https://labs.phys.utk.edu/ccheney/PHYS135/>.

Exams

The **In-Class Test** will be open book exams. Questions and Problems on the Short Test and Final Exam will generally require only a purely numerical answer (like the homework). Short Test and Final questions will generally be similar in character to example problems in the book and example problems given in lectures.

No Short Test score will be dropped and ordinarily make-up Short Text will NOT be given. Missing the final exam is very serious and may well result in failure of the course. However, if there are extremely serious circumstances supported by proper documentation, a make-up for Short Tests and/or Final may be considered at my discretion.

Grading Policy

The semester Grade will be based on a Weighted Averages of the homework assignments, the attendance, the lab grades, one 1-hour tests, and the final examination as follows:

Homework: 25%

Lab: 30%

One 1-hour in-class test: 20%

Final examination (2-hour test): 25%

Conversion to Letter Grades

A	90 - 100
A-	85 - 89
B+	80 - 84
B	75 - 79
B-	70 - 74
C+	65 - 69
C	60 - 64
C-	55 - 59
D+	50 - 54
D	45 - 49
D-	40 - 44
F	0 - 39

Course Repetition Policy

If you are repeating the course, please refer to the [Laboratory Policy Regarding Repeating a Course](http://www.phys.utk.edu/labs/Lab%20Repeat.pdf) (<http://www.phys.utk.edu/labs/Lab%20Repeat.pdf>)

Announcements, Lecture Notes, Course Updates

Aside from in-class discussion, the primary method of communication between you and me will be via Canvas and/or email. This syllabus and other important information and announcements will be posted there, as well as copies of the slides used in the lecture.

It will be your responsibility to be aware of the content of any communication taking place in class, be it an announcement or anything related to the course material, in case

you missed a class.

Questions and Appeals

I encourage you to ask questions during the lecture or/and talk to me during my office hours (Monday or by appointment – just ask after class) about the subject. You can discuss with me and/or complain to me about the grading of a given assignment, be it homework, Lab grade, Short Tests or Final Exam. Any appeal will be entertained if it is raised no later than one week after the date on which the graded Exam/ Lab/ Tests /HW are made available for return to the class. After this “appeal period” of one week, exam grades will be considered final and will not be altered. Any appeal concerning a grade in the Laboratory should directly be discussed with your Lab instructor.

For students with disabilities

If you need course adaptations or accommodations because of a documented disability, please contact the Office of Disability Services at 2227 Dunford Hall (telephone/TTY 865-974-6087; e-mail ods@utk.edu) by January 24. This will ensure that you are properly registered for services.

Academic Honesty

All work submitted by a student is expected to represent his/her own work. Students are expected to enter their own homework without assistance from others. Students are expected to perform all work in conformance with the University policies regarding Academic Honesty.

Masks and Social Distancing

Please check the Campus Syllabus (<https://teaching.utk.edu/the-syllabus/>) for most recent COVID-19 policy. Wearing a mask is always an option for any individual who chooses to do so, and the CDC recommends that those with high risk of severe illness talk with their health care providers. Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class and should stay at home.

Schedule

The class schedule is tentative.

Date	Lecture
1/23	Introduction
1/25	Position and displacement, the language of kinematics
1/27	Motion in one dimension, Freely falling objects
1/30	Motion in two and three dimensions
2/1	Projectile motion
2/3	Circular motion and relative velocity
2/6	Newton's 1 st law
2/8	Newton's 2 nd law
2/10	Newton's 3 rd law
2/13	More applications of Newton's laws
2/15	Friction

2/17	Dynamics of circular motion
2/20	Work and kinetic energy
2/22	Conservation of energy
2/24	Work and energy in various situations
2/27	Linear momentum and rockets
3/1	Rotational kinematics
3/3	Rotational dynamics
3/6-10	No class (Instructor out of town)
3/13-17	Spring break
3/20	Gravitation, Kepler's laws
3/22	Review
3/24	Test 1
3/27	Simple harmonic motion
3/29	The pendulum
3/31	Damped & forced oscillation, resonance
4/3	Mechanical waves
4/5	Sound waves
4/7	The Doppler effect
4/10	Temperature, thermal expansion
4/12	Ideal gas law
4/14	Kinetic theory and phase change
4/17	Heat, heat capacity, phase change
4/19	Heat transfer: conduction
4/21	Heat transfer: convection and radiation
4/24	First law of thermodynamics
4/26	Second law of thermodynamics
4/28	Applications: heat engines and heat pumps
5/1	Entropy
5/3	Statistical interpretation of Entropy
5/5	Applications of entropy
5/8	Review

Final: 05/15 (Monday) 1:00-3:15 pm