

PHY F302K: GENERAL PHYSICS I
SUMMER 2020
MTWThF 10-11:30 AM
UNIQUE# 86024

- Canvas: <https://utexas.instructure.com>
- Homework Server: <https://quest.cns.utexas.edu>

Course Description

This is the first part of a non-calculus-based technical physics sequence for students who need to fulfill a general physics requirement. Main topics include kinematics and dynamics of motion, work and energy, momentum, static equilibrium, fluids, oscillations, and waves. Problem solving by reducing complex situations to basic underlying principles of physics will be emphasized.

Technology Requirements

- Desktop or laptop computer (a smartphone or tablet is NOT enough)
- Microphone and webcam (either internal or external)
- Google Chrome browser (for exam proctoring)
- Reliable internet connection

Instructor

- Dr. Zhen Yao
- Email: yao@physics.utexas.edu or contact me through Canvas messages which can be accessed by clicking on Canvas "Inbox".
- Office Hours: Right after each class on Zoom. Other times by appointment.

Teaching Assistants

- Rafael Pimentel (rafaelpimentel@utexas.edu) and Saba Baig (sbaig@utexas.edu)
- Discussion Sessions: MTWThF 5 – 6:30 pm

Textbook

OpenSTAX College Physics available for free at <https://openstax.org/details/college-physics>. See below for the course schedule.

Communications

It is your responsibility to stay on top of the developments in the course as they occur. You should customize your Canvas preferences to receive immediate notifications of due dates, messages, and announcements through email, text, or the Canvas App on your smartphone. Otherwise, you are required to log into the course and check assignments, announcements, and Inbox regularly and frequently.

Piazza Q&A

We will be using Piazza for class discussions, which can be accessed from the left navigation menu in Canvas. If you have questions about anything related to lectures, homework, or course logistics, please post them on Piazza rather than emailing the TAs or me. You can even post your questions anonymously. The system is geared toward students interacting with and helping each other. Not only answering other students'

questions allows everyone to get help quickly and efficiently but explaining to someone else is the best way to check and improve your understanding of the material as well. The TAs and I can revise (if necessary) and endorse student answers so you can be confident in the quality of the responses.

Course Pre- and Co-Requisites

High school trigonometry or Mathematics 305G. Credit or concurrent registration for Physics 102M, which is a distinct and separately graded course.

Administrative Issues

Please contact Ms. Melva Harbin, mharbin@austin.utexas.edu.

Grading

Your course average will be calculated based on the weighted sum of the following: Homework – 23%, Pre-class Reading Quizzes – 5%, Exams – 72%. Course letter grades will be determined by a class curve at the end of the term and no prescribed cutoff values should be assumed.

Pre-Class Reading and Class Meetings

We will be holding synchronous class meetings on Zoom. The class meetings will be recorded. If you miss a class on any given day, you can review the lecture video which will be posted on Canvas a few hours after each class. Prior to each class meeting, you are expected to have read the relevant material from the textbook for that day and complete a reading quiz on Canvas. The lectures will not simply regurgitate what you have read, rather they will focus on explaining and expanding the concepts that you may have difficulty understanding and helping you develop quantitative problem-solving skills. During each class, interactive quiz questions will be given to highlight the concepts. From time to time, you will be asked to answer some of these questions using the free UT Instapoll app within Canvas.

TA Discussion Sessions and Extra Credit

The TA discussion sessions are an integral part of the course. Up to 3% extra credit will be given for active participation in these sessions. Note that any extra credit will be applied after the grade cutoffs have been established at the end of the semester. In this way, eligible students will benefit from it without penalizing other students.

Homework Assignments

Homework will be administered by the Quest homework server (<https://quest.cns.utexas.edu>) maintained by the College of Natural Sciences. You will download the assignments and submit your answers on the web and the solutions will be available right after the due time. Read the students' documentation at <https://wikis.utexas.edu/display/questla/Students>. Pay particular attention to how to enter numbers in scientific notation (<https://wikis.utexas.edu/display/questla/Numbers+and+Scientific+Notation>) and how grading works (<https://wikis.utexas.edu/display/questla/Zero+Floor+Default>). The lowest two homework scores will be dropped. You are encouraged to work together on the homework. You must, however, submit your own work for credit. Quest service requires you to pay a \$30 charge per course and \$60 for two or more courses per semester for its use. This charge goes toward the maintenance and operation of the resource. For payment questions, email quest.billing@cns.utexas.edu.

Midterm Exams and Final Exam

There will be three midterm exams during class time on Tuesday June 16, Friday June 26, and Wednesday July 08. The final exam is comprehensive and cumulative and will be held from 7 to 9 pm on Friday July 10. The lowest exam score will be dropped. There will be no make-up exams. If you miss an exam for any reason, it will be the one that will be dropped. If you take all three midterm exams and are content with your grades, you can opt out of the final exam. All exams will be open physical notes but NOT open internet. You may not access any electronic documents or online resources or search for answers to specific questions on the internet during an exam. No electronic devices except the computer you use to take the exam and a calculator will be allowed. In addition, you may not communicate with anyone about any aspect of the exam in any way during an exam, except with Proctorio Support. Any work that you submit must be entirely your own.

Proctorio

The exams will be proctored using Proctorio, a remote proctoring tool. You will be required to show your UT ID or a government-issued ID before beginning an exam. You must use a desktop or laptop computer with a webcam and a microphone and a stable internet connection. It is your responsibility to make sure that your computer meets the minimum system requirements for Proctorio. During an exam, Proctorio will record your testing environment. Therefore, you should select private spaces for the exam session where disruptions are unlikely and where recording devices can be enabled. You must ensure that any recordings do not invade any third-party privacy rights and accept all responsibility and liability for violations of any third-party privacy concerns. For additional information, you can visit the Proctorio website (<https://proctorio.com/support>). Instructions on how to set up Proctorio and how to take a proctored exam can be found at <https://utexas.instructure.com/courses/633028/pages/student-tutorials#fragment-3> and <https://cdn.proctorio.com/guides/canvas/test-taker/getting-started.pdf>.

Please note that enrollment in the course is an agreement to abide by and accept all terms. If you do not agree to the proctoring requirements, you may elect to drop this course before the end of the drop/add period.

Academic dishonesty

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each student is expected to uphold the University of Texas Honor Code: "As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity." Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failing the course and/or suspension/dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on academic dishonesty will be strictly enforced. For further information, please visit the Student Conduct and Academic Integrity website at: <http://deanofstudents.utexas.edu/conduct>.

Special Accommodations

This class respects and welcomes students of all backgrounds, identities, and abilities. If there are circumstances that make our learning environment and activities difficult, please let me know. Any student with a documented disability who requires academic

accommodations should contact Services for Students with Disabilities (<https://diversity.utexas.edu/disability/>) as soon as possible to request an official letter outlining authorized accommodations. Any student facing severe difficulties or emergency during the session should contact the Student Emergency Services (<https://deanofstudents.utexas.edu/emergency>), which helps to coordinate between the student and the instructors.

Important Dates

The last day to drop a course for a possible refund is Tuesday June 09. The last day to change registration to or from the pass/fail basis is Wednesday June 24. The last day to drop the course with approval is Thursday July 09.

Course Schedule

Please note changes to the schedule may be made at my discretion and if circumstances require. It is your responsibility to note these changes when announced (although I will do my best to ensure that you receive as much advanced notice as possible).

#	DAY	DATE	TOPIC	READING
1	TH	06/04	One-Dimensional Kinematics	Ch. 02
2	F	06/05	Motion with Constant Acceleration	Ch. 02
3	M	06/08	Vectors	Ch. 03
4	T	06/09	Motion in Two Dimensions	Ch. 03
5	W	06/10	Force and Motion	Ch. 04
6	TH	06/11	Using Newton's Laws	Ch. 05
7	F	06/12	Circular Motion	Ch. 06
8	M	06/15	Gravitation	Ch. 06
9	T	06/16	Midterm Exam 1	
10	W	06/17	Work and Energy	Ch. 07
11	TH	06/18	Conservation of Energy	Ch. 07
12	F	06/19	Conservation of Momentum	Ch. 08
13	M	06/22	Collisions	Ch. 08
14	T	06/23	Rotational Kinematics	Ch. 10
15	W	06/24	Torque and Static Equilibrium	Ch. 09
16	TH	06/25	Rotational Dynamics	Ch. 10
17	F	06/26	Midterm Exam 2	
18	M	06/29	Angular Momentum	Ch. 10
19	T	06/30	Statics of Fluids	Ch. 11
20	W	07/01	Fluid Dynamics	Ch. 12
21	TH	07/02	Oscillatory Motion	Ch. 16
22	F	07/03	Wave Motion	Ch. 16
23	M	07/06	More Wave Motion	Ch. 17
24	T	07/07	More Wave Motion	Ch. 17
25	W	07/08	Midterm Exam 3	
26	TH	07/09		
27	F	07/10	Final Exam, 7-9 pm	