

Introductory Physics: PHYS 171/H Mechanics (Spring 2019)

(Version of January 28 2019)

Description: This course is the first semester of a three semester sequence for physics majors and those desiring a rigorous preparation in the physical sciences. Topics are described in the Contents and Schedule, but will be modified according to departmental revisions and decisions.

Prerequisites: A good high school physics course, MATH140, MATH141 (can be concurrently enrolled).

Discussion and Lectures:

Discussion on Mon: 10:00 – 10:50 am in ESJ 0215;

Lectures Tu Th 12:30pm - 1:45pm in Physics 1204

Lecturer: Professor Rajarshi Roy,

Office: A V Williams Bldg Room 3347, Phone: (301) 405-1636, Email: rroy@umd.edu

Office hours: Mon 3:00 - 5:00 pm, Th 3:00 – 4:00 pm. Please email me at rroy@umd.edu if you intend to come.

TA and grader: Mr. Hemanth Challagulla; Office: Room 3353 A V Williams Bldg ,

Phone: (301) 405 – 8317 during office hours, please do not leave messages at this number. For messages, please contact using email

Email: Hemanth Challagulla <hchallag@terpmail.umd.edu>

Office Hours: Tue: 4 – 5 pm; Wed: 3 – 5 pm

Textbooks Required: Douglas C. Giancoli, Physics for Scientists and Engineers 4th ed (Pearson 2009)

Reading: The approximate progression of topics can be found in the Course Schedule for the planned topic for each lecture. The schedule may lag or advance by one lecture if some topics take more or less time than expected.

To enhance your comprehension of a particular subject to be covered, you should try to read the material in the text before coming to the lecture. This will enable you to ask questions about ideas you may not be able to grasp fully on the first reading and to gain a better overall perspective. Read it again after the lecture, study the examples and do the assigned problems.

I encourage questions in class (to the extent time permitting, but that can be followed up during office hours) – this could stimulate thoughts and discussions.

Course web page: Please check for new announcements, adjustment of topics or due dates in the course website at ELMS/CANVAS system: www.elms.umd.edu/page/student-support where you will also be able to access your exam grades. For questions please call the Help Desk at 301.405.1500 or email elms@umd.edu.

Homework: 11 sets of homework problems are planned, counting 30% towards your course grade. They are to be worked out and submitted on ELMS as a WORD document at the beginning of classes on the due dates – please check the course webpage for changes.

Solutions will be posted soon after, thus no late homework will be accepted after solutions are posted. We encourage group discussions but stress strongly the importance of thinking through and working out the problems on your own. Don't rely on others' help or just passively read the solutions. It makes a real difference in your grasp of the subject matter which shows clearly in your examination performance.

Mid-Term Exams: Two 75-minute closed book mid-term exams are scheduled on Thursday March 8 and Thursday April 19 during the lecture periods. Each exam is likely to contain one or more problems based on the assigned homework problems and material studied in the lectures. Each exam counts 20% towards your course grade. Please make all necessary preparations and arrangements to make sure you can take these exams because no make-up exam will be given.

The Final Exam is scheduled to be held on Thursday May 17, 1:30 -3:30pm, and is worth 30% of the course grade. It is comprehensive, with proportionately more materials from material not covered in the midterm exams. The university rule requires all students must take the final exam to receive a course grade, otherwise your course grade will be an F. Exams are meant to test your understanding and ability to apply concepts covered in the course, not how well you can memorize the formulas or course materials.

Academic dishonesty is a serious violation and will be dealt with strictly, according to University policy.

Course Grade: Your course grade will be assigned as follows:

25% homework,

20% for each of the two mid-term exams, and

30% from your final exam scores

5% for class participation

PHYSICS 171 Spring 2017 CONTENTS and SCHEDULE

Lectures: Date	Readings: Chapters in Giancoli, Physics for Sci & Eng 4th ed 2009	Homework # Due Date: Thu
1/29, 31	Chap 1 (read), 2 Kinematics: One dimensional motion	#1 2/7
2/5, 7, 12	Chap 3 Kinematics in 2 & 3 dimensions; Vectors	#2 2/14
2/12, 14, 19, 21	Chap 4, 5 Dynamics: Newton's Laws of Motion, Friction	#3 2/21
2/26, 28, 3/5	Chap 5-6 Circular motion, Gravitation	#4 2/28
3/7, 12	Chap 6 Gravitation	#5 3/12
March 14 (Thursday) Midterm Exam 1 (Chapters 1 - 6)		
3/17 - 3/24 Spring Break		
3/26, 28	Chap 7 Work and Energy	#6 4/2
4/2, 4	Chap 8 Conservation of Energy	#7 4/11
4/9, 11	Chap 9 Linear Momentum	#8 4/18
4/16, 18	Chap 10 Rotational Motion	#9 4/25
April 23 (Tuesday) Midterm Exam 2 (Chapters 7-9)		
4/25, 30	Chap 11 Angular Momentum, excluding Sec 7-9	#10 5/2
5/7, 9	Chap 12, 13 Selected topics	#11 5/14
5/14	Review session and last day of classes	

May 21 Tuesday, 1:30 -3:30pm, Final Exam, Comprehensive

Course policies

Standard university policies:

All of the standard policies at <http://www.ugst.umd.edu/courserelatedpolicies.html> apply. Please take a look to familiarize yourself with these policies. My policies specific to this course are below.

Late or missed work:

Assignments normally must be completed and turned in when they are due unless you have a valid excuse according to university policy, e.g. illness or family emergency, in which case an extension will be granted. Please let me know your situation as soon as possible, and I will tell you if I need documentation for the reason. However, **I am also giving each student four free one-day (25-hour) extensions to use on homework assignments**, with no excuse needed (but you can only use one per assignment). For example, for an assignment due in class on a Tuesday, using one of your one-day extensions allows you to turn it in by 10:00 a.m. on Wednesday. In general, no credit will be given for work turned in late without either a free extension or a valid excuse, but contact me if there is some extenuating circumstance and I may make some allowance for that.

In the case of illness, we will follow the university policy posted at <http://www.president.umd.edu/policies/v100g.html>: The *first* time you miss a due date during the semester, I will accept a self-signed note from you (without a doctor's note) explaining the dates of your illness and stating that the information is true and correct. If illness causes you to miss more than one due date during the semester, or to miss an exam, I will require a doctor's note. If you do miss an exam, I will schedule a make-up time with you as soon as possible—it starts to cause problems if it's more than a few days later. In any case, whatever the reason for your absence, it is important that you contact me as soon as you reasonably can.

Policy on collaborating:

Working together with other students is part of the course, e.g. in the lectures, discussions, and activities. Working together to study and figure out the homework is also encouraged, but you must do and turn in **your own work!** This simple rule applies: **Never look at someone else's written solution** (on paper, a blackboard/whiteboard, or a screen). That applies to your classmates as well as anything you might find on the web. Talking about how to work the problem is fine if it helps you to understand it better, but copying a solution is strictly forbidden (and will not enable you to succeed on the exams). Work that appears to have been copied will receive zero credit and may lead to an academic integrity referral (see below).

Honor Code:

The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity, and as a student you are responsible for upholding these standards for this course. I will ask you to sign the Honor Pledge on exams; I won't ask you to sign it on each homework assignment, but it should be understood that the Honor Code still applies to

homework. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, or plagiarism. Violations will be taken very seriously and may result in an XF grade for the course and possible suspension. As your teacher, I have an obligation to uphold the Honor Code and have had to submit some Academic Integrity Referrals in past years, unfortunately, which led to XF grades. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://shc.umd.edu/SHC/Default.aspx> .

Religious observances:

If you need to miss class, discussion, a homework deadline, or an exam due to a religious observance, please notify me in advance—preferably at the beginning of the semester—so that we can make appropriate arrangements.

Students with disabilities:

Accommodations will be provided to enable students with documented disabilities to participate fully in the course. Please discuss any needs with me at the beginning of the semester so that appropriate arrangements can be made.

Weather or emergency closures:

If the University is closed due to weather or some emergency situation on a day when homework is due, then that homework must be turned in at the beginning of the next class when the University is open. If the University is closed on the scheduled date of an exam, then the exam will be given during the next class period when the University is open. If the University is closed on any non-exam day, including just before an exam, then the exam will still be given according to the original schedule. If some calamity causes the University to be closed for an extended period, I will continue the course by recording video lectures and posting them on the web, and will ask you to watch them, read, and do homework assignments on your own. In these or other exceptional circumstances, I will attempt to send out information by email.

Course announcements by email:

If I need to send important information to the class, I will send it via the coursemail reflector to the email addresses you have listed for the university.

Privacy:

You have a right to privacy of your educational records, including the fact that you are enrolled in this course, but I hope you won't mind if I may call you by name in the presence of other students, and hand back graded papers in class. If that may be an issue or if you are ever uncomfortable with the class environment, please don't hesitate to let me know.