Physics 207: Section GHs

MW 5:00 – 6:40 pm via Zoom Meeting, or anytime via video recording

Instructor

Professor Tiburzi
btiburzi@ccny.cuny.edu

Office Hours

M 2:00 – 3:30 pm, via Zoom Meeting, or post anytime on the Blackboard Discussion Thread

Grading

7% = In-Person Laboratory Sessions (ended week of March 9)
14% = 2 × 7% In-Class Quizzes (February 5, March 11)
21% = In-Class Exam (March 2)

8% = Online Laboratory Sessions (beginning week of March 23)
14% = Online Homework (Due Dates TBA)
21% = 3 × 7% Online Quizzes (Dates TBA)
15% = 5% + 10% Final Project [Proposal (May 6)+ Report (May 22)]

Texts To Consult

[LSM] Ling, Sanny & Moebs, University Physics I, OpenStax Click here to download
[HRW] Halliday, Resnick & Walker, Fundamentals of Physics, 10th Edition, Wiley (2013)

Course Objectives

After successfully completing this course, students will understand
1. dimensional analysis, along with vectors and their components
2. kinematics of motion (the relationships between position, velocity, acceleration, and time)
3. Newton's laws of motion (including forces, equilibrium of forces)
4. work and energy (including kinetic and potential energy, conservation of mechanical energy)
5. impulse and momentum (including the conservation of linear momentum)
6. rotational motion (including rotational kinematics and dynamics, static equilibrium)
7. gravitational interactions (including Kepler's laws, satellite motion)
8. simple harmonic motion (including springs, oscillations about equilibrium)
9. basic principles of fluid dynamics (including static and flowing fluids)
~~10. the first law of thermodynamics (including temperature, heat, work, internal energy, ideal gases)~~

Academic Integrity and Plagiarism

The CCNY policy on Academic Integrity will be strictly adhered to. The CUNY Policy on Academic Integrity is available by clicking on the embedded link. Make sure you have read the details regarding plagiarism and cheating, and be clear about the rules that the college follows. Cases where academic integrity is compromised will be prosecuted to the fullest extent according to these rules.

Laboratory Section

For this integral component of the course, your virtual attendance is required. Laboratory sections continue to meet every week online. Click here for continually updated information. Some weeks will feature a physics simulation, while others will focus on problem solving and course content. A passing course grade cannot be earned if you fail to submit all reports by their due dates. In case you are repeating Physics 207, laboratory section grades are not carried over from a previous semester, because the laboratory is not a separate course.

Exercises

Online homework has been added to the syllabus to help you master course material during the online-learning phase. `Access to the assignments will be provided free of charge, however, the details are still forthcoming...` The recommended problems, while still recommended, have been removed from the schedule in favor of the homework assignments. As `solving problems remains the only way to succeed in this course`, the textbooks and online resources provide plenty of additional practice.

Study Habits

Expect to spend at least 10 hours per week, every week, studying course material and solving problems. This estimate is in `addition` to time spent in lecture and laboratory sections. Material in this course is highly cumulative. The regularly spaced assignments and quizzes are intended to help you stay current with lecture material.

Quizzes and Exams

Questions on quizzes and exams will relate to the concepts covered in homework assignments, lectures, and laboratory sections. These questions, however, will not be identical to any of the problems encountered. Critical thinking and quantitative reasoning are being tested in this course, not the ability to memorize and regurgitate.

Final Project

Can you figure out a way to measure a coefficient of friction, a rotational inertia, a precise value for g, ..., using only household items? You are to design and carry out an at-home physics experiment for the final project, which consists of a one-page proposal describing your experiment in outline form, and a written report that includes analysis of the data you collect. Click here for the general guidelines for writing a report. Do not purchase equipment to carry out the experiment; use only items available at home— ingenuity counts! Your experiment must combine physics from multiple textbook chapters, at minimum two from the set of chapters: 5 & 6, 7 & 8, 9, 10 & 11, 12, 14, 15. Note that the paired chapters only count as one item as the topics are very interrelated. The proposal must outline which chapters cover the physics involved in your experiment, and must be approved before the experiment can be conducted (although you may need to make some preliminary measurements to test feasibility). It is possibile that your proposal for the experiment may need revision before approval. For example, if your proposed experiment is too simplistic, an easy way to fix this is to add a second experiment that can confirm or use the results of the first. The proposal is due May 6, but early submission is welcome. The written report is due on the last day of finals week, May 22.

AccessAbility Center/ Student Disability Services

The AccessAbility Center/ Student Disability Services (AAC/SDS) ensures equal access and full participation to all of CCNY's programs, services, and activities by coordinating and implementing appropriate accommodations. If you are a student with a disability who requires accommodations and services, please visit the office in NAC 1/218, or contact AAC/SDS via email `disabilityservices@ccny.cuny.edu`, or phone 212-650-5913 (TTY/TTD 212-650-8441). It is required that faculty receive an official AAC/SDS accommodation memo from the student before proceeding to implement accommodations.

Weekly Lecture Schedule

Lectures are not held on the dates that are crossed out, while the **dates that are boxed were the in-person quizzes**. Dates for the online quizzes have yet to be set. The online assignments are also tentative, but should be underway soon. Updates to this syllabus will continue to be posted on `Blackboard`. Note that, with the exception of Chapters 2 and 3, the chapter topics from `[LSM]` and `[HRW]` coincide.

Dates	Reading from `[LSM]` (Chapter.Section)	Problems from `[LSM]` (Chapter.Problem)
1/27	1. Units and Measurements (1.1–1.7)	1.39, 1.40, 1.50, 1.52
1/29	3. Motion Along a Straight Line (3.1–3.6)	3.28, 3.30, 3.33, 3.40, 3.59, 3.68
2/3	3. Motion Along a Straight Line (3.1–3.6)	3.72, 3.93, 3.99, 3.101, 3.111, 3.112
2/5	2. Vectors (2.1–2.3)	2.29, 2.34, 2.37, 2.41, 2.48, 2.60
2/10	4. Motion in 2 and 3 Dimensions (4.1–4.3)	4.25, 4.28, 4.34, 4.39, 4.43, 4.46, 4.92, 4.101
~~2/12~~		
~~2/17~~		
2/19	4. Motion in 2 and 3 Dimensions (4.4)	4.63, 4.79, 4.81, 4.83, 4.88
2/24	5. Newton's Laws of Motion (5.1–5.7)	5.21, 5.28, 5.36, 5.48, 5.52
2/26		5.58, 5.63, 5.74, 5.89, 5.103
3/2	**Exam I**	
3/4	6. Applications of Newton's Laws (6.1–6.3)	6.26, 6.42, 6.44, 6.55, 6.94, 6.99
3/9	6. Applications of Newton's Laws (6.1–6.3)	6.71, 6.72, 6.76, 6.117, 6.120, 6.128
3/11	2. Vector Dot Product (2.4)	2.62, 2.63
~~3/16~~ ~~3/18~~	CUNY Instructional Pause	Switch to Online Homework
3/20	7. Work and Kinetic Energy (7.1–7.4)	Assignment 1
3/23		
3/25	8. Potential Energy/Energy Conservation (8.1–8.3)	
~~3/30~~ ~~4/1~~	CUNY Recalibration Period	
4/6	9. Linear Momentum and Collisions (9.1–9.4)	Assignment 2
4/7		
	Spring Break (reduced to 4/8 –4/10)	
4/13	15. Oscillations (15.1–15.5)	Assignment 3
4/15		
4/20	14. Fluid Mechanics (14.1–14.5)	Assignment 4
4/22		
4/27	2. Vector Cross Product (2.4)	Assignment 5
4/29	10. Fixed-Axis Rotation (10.1–10.3)	
5/4	10. Fixed-Axis Rotation (10.4–10.8)	Assignment 6
5/6	11. Angular Momentum (11.1–11.3)	Proposal Due
5/11	13. Gravitation (13.1–13.5)	Assignment 7
5/13		
5/22	**Final Project Due**	