

Spring 2021

PHYSICS 1710

Mechanics

Lecture Section 002, TuTh 9:30 - 10:50 am, will be taught remotely via Zoom

Recitation Sections 206, 207, 208, 209, 210, Remote, TuTh 11:00, 12:00, 2:00, 4:00, 1:00 pm, respectively

Professor: Yuankun Lin

Office: Physics Bldg., Room 323

Telephone: (940) 565-4548

E-mail: yuankun.lin@unt.edu The best way to reach me with questions or concerns is via email. In most cases, you can expect to receive my response to emails within 24 hours.

Office Hours: TuTh 10:50-11:50 am, and by appointment

Welcome to UNT! As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

Textbook and Online homework system:

The recommended textbook is *University Physics*, 15th Edition, by Young and Freedman (Pearson). Other calculus-based introductory physics texts are acceptable; *the successful student will have a text*. You are required to obtain access to the Mastering Physics online homework system.

Options with Young/Freedman textbook that include Mastering access:

- o Hardcover text with MasteringPhysics access
- o 3-hole punched edition with MasteringPhysics access
- o MasteringPhysics access including e-book for Young/Freedman

Topics:

This course will introduce fundamental concepts from classical mechanics including velocity, acceleration, inertia, force, the laws of motion, work and energy, linear momentum, angular momentum, mechanical conservation laws, rotational and oscillatory motion, waves, fluids; and fundamental concepts from thermodynamics including temperature and heat.

Class Materials for Remote Instruction:

The UNT Spring schedule requires this course to have fully remote instruction. Students will need access to a webcam, microphone & speakers and computer capable of running Zoom, internet access, and the Respondus lock-down browser in Canvas. You should familiarize yourself with using these programs. Information on how to be successful in a remote learning environment can be found at <https://online.unt.edu/learn>.

Class Recordings & Student Likenesses:

Any class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Physics 1710 Core Objectives:

This course satisfies the core course requirement by fostering skills associated with four core objectives:

- 1) **Critical thinking** - analysis, evaluation, and synthesis of information.
- 2) **Effective communication** - development, interpretation, and expression of ideas through written, oral, and graphical means.
- 3) **Quantitative skills** - the ability to compute and manipulate quantitative data and to reach meaningful conclusions.
- 4) **Teamwork** - the ability to consider different points of view and to work effectively as a team.

Class Policies:

- 1) Students are to attend class and recitations regularly as scheduled.

- 2) Students are to be prepared for class (read/review assigned chapters prior to lecture).
- 3) This is a professional environment. Students are to be respectful of the instructor and other students. No vulgar language or rude behavior will be tolerated.
- 4) Pertinent questions should be directed to the instructor. Patience with other student's questions is expected behavior.
- 5) *Classes will start at the assigned time. Tardy students will not be given any additional time on Exam or Final Exam days.*
- 6) Students are expected to participate by answering in-class questions, and taking weekly written recitation quizzes.
- 7) Silence mobile phones prior to attending class. **Put mobile phones away.**

Exams:

- 1) There will be three 90-minute exams during the semester, to be given starting at 4:00 pm on Friday afternoons, and a comprehensive final exam, to be given at **8:00-10:00 am, 4/29 Thursday**. Exam questions will be based on lecture material, material contained in the text and in the homework assignments. Exams will be comprised of multiple choice questions/problems. You will be required to download Respondus Lockdown Browser on your computer and access it when taking your exams.
- 2) There will be no makeup exams.
- 3) **Any student caught cheating will be given a grade of zero for that exam or final exam.**
- 4) Questions pertaining to the grading of exam questions and problems must be directed to the instructor in writing **within one week** after the exams were administered.

Homework:

- 1) All homework will be posted, collected, and graded via the internet.
- 2) You must access your assignment each week online through the <https://www.pearson.com/mastering> website, work the problems, and submit your solutions to the server by the due date indicated online.
- 3) Homework grading policy: Your homework grade is determined from your Mastering Physics web-based homework score.
- 4) **Homework registration information is given at the end of this syllabus.**

Grades:

The course grades will be calculated as follows:

Exam 1	17%
Exam 2	17%
Exam 3	17%
Final Exam	30%
Home Work	10%
Class/Recitation	9%

Letter grades will be assigned on the basis of the numerical scores: A = 90 and above; B = 80-89; C = 70-79; D = 60-69

Lab Credit:

You must enroll separately in Physics 1730 for laboratory science credit.

Topic Schedule – the instructor reserves the right to amend the topic schedule.

1	12-Jan	Tu	Introduction; Ch. 1, Units, Physical Quantities
2	14-Jan	Th	Ch. 1, Vectors
-	18-Jan	M	MLK Jr. Day
3	19-Jan	Tu	Ch. 2, Motion along a Straight Line
4	21-Jan	Th	Ch. 2, continued
5	26-Jan	Tu	Ch. 3, Motion in Two Dimensions
6	28-Jan	Th	Ch. 3, continued
7	2-Feb	Tu	Ch. 4 Newton's Laws of Motion – Forces
8	4-Feb	Th	Ch. 4, continued
9	9-Feb	Tu	Ch. 5, Applications of Newton's Laws

10	11-Feb	Th	Ch. 5, continued
E1	12-Feb	F	Exam 1 Ch.s 1-4
11	16-Feb	Tu	Ch. 6, Work
12	18-Feb	Th	Ch. 6, continued
13	23-Feb	Tu	Ch. 7, Potential Energy and Energy Conservation
14	25-Feb	Th	Ch. 7, continued
15	2-Mar	Tu	Ch. 8, Collisions
16	5-Mar	Th	Ch. 8, continued
17	9-Mar	Tu	Ch. 9, Rotation of Rigid Bodies
18	11-Mar	Th	Ch. 9, continued
19	16-Mar	Tu	Ch. 9, continued
20	18-Mar	Th	Ch. 10, Dynamics of Rotational Motion
E2	19-Mar	F	Exam 2 Ch.s 5-9
21	23-Mar	Tu	Ch. 10, continued
22	25-Mar	Th	Ch. 10, continued
23	30-Mar	Tu	Ch. 13, Gravitation
24	1-Apr	Th	Ch. 13, continued
25	6-Apr	Tu	Ch. 14, Periodic Motion
26	8-Apr	Th	Ch. 14, continued
27	13-Apr	Tu	Ch. 15, Mechanical Waves
28	15-Apr	Th	Ch. 15, continued
E3	16-Apr	F	Exam 3 Ch.s 10, 13-15d
29	20-Apr	Tu	Selected Topics
30	22-Apr	Th	Last Class Day, review
-	23-Apr	F	Reading Day
Final	29-Apr	Th	FINAL EXAM –Comprehensive—8:00 AM to 10:00 AM

Physics 1710 Goals and Learning Strategies:

The goals of instruction in Physics 1710 are to lead and to guide you to master the fundamentals of elementary classical mechanics and thermodynamics, to construct for yourself a fundamental understanding of these topics, to develop your skills of analysis using the mathematical tools of algebra and calculus, and to cultivate an interest in and an appreciation for physics in nature and in the human experience. To help in achieving these goals you are requested to pursue the following strategies:

- 1) **Read the text chapter within the forty-eight hours prior to the class.** You should bring your questions to class or e-mail to the instructor prior to the morning of the class.
- 2) During class, **listen, observe, take notes, analyze, discuss with peers, answer questions, solve in-class problems. (Again, silence your mobile phone and put it away.)**
- 3) **Review your textbook chapter summary and your notes** within twenty-four hours after class.
- 4) **Work the assigned problems** only after you have read and reviewed the material of the chapter. If you get stuck on a problem (for instance, after 3 unsuccessful attempts, or 20 minutes of effort), move on to the next problem and bring your questions to recitation or your instructor.
- 5) **Communicate with your instructor** via e-mail at Yuankun.lin@unt.edu or during office hours whenever you have an observation or question. **Be specific with your questions.**
- 6) **Come to class prepared!**
- 7) **Work extra practice problems**, such as from the text's end-of-chapter problems.

To learn more about campus resources and information on how you can achieve success, go to succeed.unt.edu.

Ancillary Information

UNT Policies

UNT's policy on *Academic Dishonesty* can be found at: <http://www.vpaa.unt.edu/academic-integrity.htm>

ADA Policy: UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a

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disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/) (<https://disability.unt.edu/>).

Canvas will be used to post some useful course materials and your grades. To get to this resource, go to <https://unt.instructure.com/login/canvas> and follow the UNT link to log on. (You will log on using your UNT EUID and password.) Once logged on, select this course. You will find an electronic copy of this syllabus, copies of the PowerPoint presentations from lecture, and exam expectations.

Course Evaluation

The Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available to you on-line at the end of the semester and will provide you with an opportunity to provide feedback to your course instructor. SPOT is considered to be an important part of your participation in this class. In addition to SPOT, there will be a brief in-class course survey during the last two weeks of the semester.

For the Spring 2021 semester you will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Please look for the email in your UNT email inbox. Simply click on the link and complete your survey.

After logging in to the my.unt.edu portal, students can access the SPOT survey site by clicking on the SPOT icon. A list of their currently enrolled courses will appear. Students complete each course evaluation independently. During the long terms, the SPOT is open for students to complete two weeks prior to final exams. During the Spring term, the SPOT is open for students to complete six days preceding their final exam. See SPOT Calendar for specific dates and deadlines.

COVID-19 Impact on Attendance

While attendance is expected as outlined in the syllabus, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. If you are experiencing any symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, are more important.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Student Registration Instructions

To register for UNTPHYS1710Spring2021Lin:

1. Go to <https://www.pearson.com/mastering>.
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: **lin67120**, and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**. You have an account if you have ever used a MyLab or Mastering product.
 - » If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
 - » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
 - » If available for your course,
 - Buy access using a credit card or PayPal.
 - Get temporary access.

If you're taking another semester of a course, you skip this step.
7. From the You're Done! page, select **Go To My Courses**.
8. On the My Courses page, select the course name **UNTPHYS1710Spring2021Lin** to start your work.

To sign in later:

1. Go to <https://www.pearson.com/mastering>.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select the course name **UNTPHYS1710Spring2021Lin** to start your work.

To upgrade temporary access to full access:

1. Go to <https://www.pearson.com/mastering>.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select **Upgrade access** for **UNTPHYS1710Spring2021Lin**.

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5. Enter an access code or buy access with a credit card or PayPal.