

PHYSICS 1710
Mechanics and Thermodynamics
Fall 2019

Lecture Section 001, Physics Room 102, MoWeFr 9:00AM - 9:50AM
Recitation-201, MoWe 10:00AM - 10:50AM, Phys 115, TA instructor
Recitation-202, MoWe 11:00PM - 11:50PM, Phys 116, TA instructor
Recitation-203, MoWe 11:00AM - 11:50AM, Phys 115, TA instructor
Recitation-204, MoWe 10:00PM - 10:50PM, Phys 116, TA instructor
Recitation-205, Fr 10:00PM - 11:50PM, Phys 116, TA instructor

Professor: Yuankun Lin
Office: Physics Bldg., Room 323
Telephone: (940) 565-4548
E-mail: yuankun.lin@unt.edu
Office Hours: MoWeFr 10:00-11:00 am, and by appointment

Text: Recommended text is *University Physics*, 13th, 14th, or 15th Edition, by Young and Freedman. Other calculus-based introductory physics texts are acceptable; **the successful student will have a text**. Students are required to obtain access to MasteringPhysics.com online homework from Pearson.

- **Options with Young/Freedman textbook that include Mastering access:**
 - Hardcover text with MasteringPhysics access
 - 3-hole punched edition with MasteringPhysics access
 - 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; gravity, periodic motion, and mechanical waves.

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.

Attendance/Participation/Electronic device policy:

- 1) You are expected to attend all lectures and recitations for the section in which you are enrolled;
- 2) Excuses of non-attendance after lectures without doctor documents are not acceptable.
- 3) The in-class quiz will be counted toward your extra credit and used to check your attendance. You need to hand in your in-class quiz by yourself (i.e. I accept one quiz only from each of you).
- 4) Cell-phone and computers are not permitted to use in the lecture. These electronic devices might be taken away and you can take them back with a fee.
- 5) 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.
- 6) Classes will start at the assigned time. Students who arrive late should enter quietly and sit down. Do not walk between the instructor and class across the front of the room as it is disruptive and disrespectful to the instructor and fellow students. Tardy students will not be given any additional time on Exam or Final Exam days.

Specific Expectations: 1. Be able to solve the example questions in slides independently without looking at the class notes. If you cannot solve them, look at the solution in your class notes and try again next day; 2. Be able to finish the home work independently; 3. Be able to finish the recitation questions independently; 4. Read through text-book to understand some key concepts.

Exams:

- 1) There will be **three 90-minute common exams** during the semester, to be given starting at 4:00 pm on Friday afternoons, and a comprehensive final exam,
- 2) Questions pertaining to the grading of exam questions and problems must be directed to the instructor in writing within two weeks after the exams are returned.
- 3) **There will be no makeup exams.**

- 4) Students are to provide their own pencil, eraser, ink pen and calculator. Phone calculators CANNOT be used.
- 5) Students CANNOT share pencils, erasers, pens or calculators during tests or the final exam.
- 6) **Any student caught cheating will be given a grade of zero for that exam.**

Homework:

- 1) All homework will be posted, collected, and graded via the internet.
- 2) You must access your assignment each week online through the Mastering Physics 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) **Details of accessing the homework server are given on the last page of this syllabus.**

Grades:

The course grades will be calculated as follows:

Exam 1, 2, 3	17 %/each
Final Exam	30 %
Home Work.....	15 %
Class/Recitation.....	4 %

Letter grades will be assigned on the basis of the following numerical scores:	90 —above 100 = A
	80 – 89 = B
Grades will NOT be rounded or scaled.	70 - 79 = C
	60 - 69 = D
	89.99 = B
	69.99 = D

Lab Credit:

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

Ancillary Information

Academic Accommodations

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at 940.565.4323.

Drop/withdrawal dates is available in the schedule of classes at:

<https://registrar.unt.edu/registration/fall-registration-guide>

Last day for a student to drop a class with a W: Monday November 4th, 2019

UNT’s policy on **Academic Dishonesty** can be found at:

<http://www.vpaa.unt.edu/academic-integrity.htm>

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, old exams, and equation sheets.

Tutors are available in Physics Room 209 Monday through Friday to assist you with questions related to solving homework problems.

- Mon 10 am to 6 pm
- Tues 10 am to 6 pm
- Wed 10 am to 6 pm
- Thurs 10 am to 8 pm
- Fri 10 am to 4 pm

Tentative Lecture Schedule— the instructor reserves the right to amend the topic schedule.

Session Date Day Chapter, Lecture Topic

1	26-Aug	M	Introduction; Ch. 1, Units, Physical Quantities
2	28-Aug	W	Ch. 1, Vectors
3	30-Aug	F	Ch. 1, Vectors
-	2-Sep	M	Holiday: no class
4	4-Sep	W	Ch. 2, Motion along a straight line
5	6-Sep	F	Motion along a straight line continued,
6	9-Sep	M	Ch. 3, Motion in Two Dimensions
7	11-Sep	W	Motion in Two and Three Dimensions
8	13-Sep	F	Motion in Three Dimensions
9	16-Sep	M	Ch. 4, Newton's Laws of Motion—1st law
10	18-Sep	W	1st and 2nd Laws
11	20-Sep	F	1st and 2nd Laws
	20-Sep	F	Exam 1— SAGE 116, 4:00-5:30 pm
12	23-Sep	M	3rd Law, Applications
13	25-Sep	W	Ch. 4 Applications continued
14	27-Sep	F	Ch. 5, Applications of Newton's Laws
15	30-Sep	M	Applications of Newton's Laws continued
16	2-Oct	W	Ch. 5, Newton's Laws continued, Ch. 6, Work
17	4-Oct	F	Ch. 6, Kinetic Energy
18	7-Oct	M	Kinetic Energy continued
19	9-Oct	W	Ch. 7, Potential Energy
20	11-Oct	F	Energy Conservation
21	14-Oct	M	Applications
22	16-Oct	W	Ch. 8, Momentum
23	18-Oct	F	Impulse and Collisions
	18-Oct	F	Exam 2— SAGE 116, 4:00-5:30 pm
24	21-Oct	M	Impulse and Collisions continued
25	23-Oct	W	Ch. 9, Rotation of Rigid Bodies
26	25-Oct	F	Rotation of Rigid Bodies continued
27	28-Oct	M	Rotation of Rigid Bodies continued
28	30-Oct	W	Ch. 10, Dynamics of Rotational Motion
29	1-Nov	F	Dynamics of Rotational Motion continued
30	4-Nov	M	Ch. 10, Dynamics of Rotational Motion continued
31	6-Nov	W	Ch. 10, continued
32	8-Nov	F	Ch. 11, Equilibrium
33	11-Nov	M	Ch. 11, continued
34	13-Nov	W	Ch. 11, continued
35	15-Nov	F	Ch. 14, Periodic Motion
36	18-Nov	M	Ch. 14, continued
37	20-Nov	W	Ch. 14, continued
38	22-Nov	F	Ch. 15, Mechanical Waves
	22-Nov	F	Exam 3- SAGE 116, 4:00-5:30 pm

39	25-Nov	M	Mechanical Waves continued
40	27-Nov	W	Continued
-	29-Nov	F	No class Friday, – Thanksgiving Holiday
41	2-Dec	M	continued
42	4-Dec	W	Review for exam
-	6-Dec	F	Reading day. No Class
Final	11-Dec	Phys 102,	FINAL EXAM —Comprehensive— 8:00 a.m. - 10:00 a.m.

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 in 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, and answer questions, solve in-class problems.**
- (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.
- (5) **Respond via e-mail** to yuan.kun.lin@unt.edu or during office hours whenever you have an observation or question.
- (6) **Come to class prepared:** bring a calculator, your text book and, above all, to participate and take full advantage of the lecture hall learning experience.

The Student Perceptions of Teaching (SPOT)

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.

Near the end of the Fall 2019 semester you will receive an email on 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 Fall term, the SPOT is open for students to complete six days preceding their final exam. See [SPOT Calendar](#) for specific dates and deadlines.

Note to Members of TAMS

The Texas Academy of Mathematics and Science (TAMS) administration has made the followings statement and has asked us to include it in our syllabus for members of the Academy:

“Class attendance and participation is required. Students must be alert, attentive, energetic, and eager to learn. Students who exhibit disruptive behavior or show disrespect to a teacher in the classroom are subject to severe disciplinary sanctions. The Academy does not authorize absences from class. Students must report all absences to the Academic Office within 36 hours of the absence by completing a form in the Academic Office. A student will be assessed 5 disciplinary points for each class absence, unless the absence can be justified. **Faculty will also be reporting absences to the Academic Office.** A student will be assessed 15 disciplinary points for failure to report an absence that is reported by a faculty member.”

If you are a TAMS student and if you are absent for any reason, you are required to file an absence report with the TAMS Academic Office.

Note: This document is for informational purposes only and is subject to change upon notification.

Student Registration Instructions

To register for UNTPHYS1710LIN2019:

1. Go to 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: **lin89958**, 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 **UNTPHYS1710LIN2019** to start your work.

To sign in later:

1. Go to www.pearson.com/mastering.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select the course name **UNTPHYS1710LIN2019** to start your work.

To upgrade temporary access to full access:

1. Go to www.pearson.com/mastering.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select **Upgrade access** for **UNTPHYS1710LIN2019**.
5. Enter an access code or buy access with a credit card or PayPal.