

PHYSICS 1710
Mechanics and Thermodynamics
Fall 2018

Lecture Section 002, Physics Room 102, TuTh 9:30AM - 10:50AM
Recitation-206, TuTh 8:00AM - 8:50AM, Phys 116, TA instructor
Recitation-207, TuTh 12:00PM - 12:50PM, Phys 116, TA instructor
Recitation-208, TuTh 11:00AM - 11:50AM, Phys 116, TA instructor
Recitation-209, Tu 1:00PM - 2:50PM, Phys 116, TA instructor
Recitation-210, Th 1:00PM - 2:50PM, Phys 116, TA instructor

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Office Hours: TuTh 9:00-9:30 am, 10:50-11:50 am, and by appointment

Text: Recommended text is *University Physics*, 13th or 14th 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 the laws of motion, inertia, acceleration, force, energy, momentum, angular momentum, conservation laws, rotational and oscillatory motion, gravitation, and thermodynamics.

Attendance/Participation/Electronic device policy: You are expected to attend all lectures and recitations for the section in which you are enrolled; Excuses of non-attendance after lectures without doctor documents are not acceptable. 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). 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.

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: There will be four exams including the final exam. Exam questions will be based on lecture material, material contained in the text and in the homework assignments. 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. **There will be no makeup exams.**

Homework: All homework will be posted, collected, and graded via the internet. You will also be required to turn in written solutions to selected homework problems, which will be collected weekly and graded. You must access your assignment each week online, work the problems, and submit your solutions to the server by the due date indicated online. Your neatly written solutions to the homework problems requiring such must put in the mailbox labeled “1710.002 – Lin” near the south end of the 2nd floor hallway in the Physics Building by the same due date and time as for the online homework. Details of accessing the homework server are given on the 4th page of this syllabus.

Grade: The grading in the course will be based on the total points earned from exams, homework, and lecture and recitation attendance. The point values for each category are given below:

Exams	1 st exam 15% ; 2 nd exam 15% ; 3 rd exam 15% ; 30% for the final.
Homework	12%
Lecture & Recitation	7% for lecture participation, 6% for recitation participation and quiz
Total	100%

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

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

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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.

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

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

Session	Date	Day	Chapter, Lecture Topic
1	28 Aug	T	Introduction; Ch. 1, Units, Physical Quantities
2	30 Aug	R	Ch. 1, Vectors
3	4 Sep	T	Ch. 2, Motion in One Dimension
4	6 Sep	R	Ch. 3, Motion in Two Dimensions
5	11 Sep	T	Ch. 3, Motion in Two and Three Dimensions
6	13 Sep	R	Ch. 3, Motion in Three Dimensions; Ch. 4, Newton's Laws of Motion—1 st Law
7	18 Sep	T	Ch. 4, Newton's Laws of Motion—2 nd and 3 rd Laws
8	20 Sep	R	Ch. 5, Applications of Newton's Laws
9	25 Sep	T	Ch. 5, Applications of Newton's Laws continued
10	27 Sep	R	
27 Sep		Exam 1	
11	2 Oct	T	Ch. 6, Work and Kinetic Energy
12	4 Oct	R	Ch. 7, Potential Energy and Energy Conservation
13	9 Oct	T	Ch. 7, Applications of Energy Conservation
14	11 Oct	R	Ch. 8, Momentum and Impulse
15	16 Oct	T	Ch. 8, Collisions
16	18 Oct	R	Ch. 9, Rotation of Rigid Bodies
17	23 Oct	T	Ch. 9, Rotation of Rigid Bodies
18	25 Oct	R	
25 Oct		Exam 2	
19	30 Oct	T	Ch. 10, Dynamics of Rotational Motion continued
20	1 Nov	R	Ch. 10, Dynamics of Rotational Motion continued
21	6 Nov	T	Ch. 13, Gravitation continued
22	8 Nov	R	Ch. 13, Gravitation continued;
23	13 Nov	T	Ch. 14, Periodic Motion
24	15 Nov	R	Ch. 14, Periodic Motion
25	20 Nov	T	Ch. 15, Mechanical Waves
-	22 Nov	R	No class – Thanksgiving Holiday
26	27 Nov	T	Ch. 15, Mechanical Waves continued
27	29 Nov	R	
29 Nov		Exam 3	
28	4 Dec	T	Ch. 16, Sound and Hearing, Selected topics from Ch. 17: Temperature & Heat;
29	6 Dec	R	Review for Exam
Final	13 Dec	FINAL EXAM —Comprehensive— 8:00 a.m. - 10:00 a.m.	

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Physics 1710 Core Objectives

This course satisfies the core course requirement by achieving 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.
- (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.

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 yuankun.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.

Homework Information

In this course you will be using MasteringPhysics®, an online tutorial and homework program.

What You Need:

- ✓ **A valid email address**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or you can purchase access online at www.masteringphysics.com.)
- ✓ The ZIP code for your school: **76203**
- ✓ A Course ID: **UNTPHYS1710LIN2018**

Register

- Go to www.masteringphysics.com and click **New Students** under **Register**.
- To register using the Student Access Code inside the MasteringPhysics Student Access Kit, select **Yes, I have an access code**. Click **Continue**.
–OR– **Purchase access online:** Select **No, I need to purchase access online now**. You will be asked to select your textbook—choose **Young/Freedman University Physics 13e**, but you *don't* need to purchase the e-book. Click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process may differ slightly from the steps printed here.
- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under “Do you have a Pearson Education account?” and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to www.masteringphysics.com later.

Log In

- Go to www.masteringphysics.com.
- Enter your Login Name and Password and click **Log In**.

Enroll in Your Instructor's Course and/or Access the Self-Study Area

Upon first login, you'll be prompted to do one or more of the following:

- **Join your MasteringPhysics course** by entering the **Course ID** provided by your instructor.
- Enter your UNT User ID (**for example y10668**), if prompted. Your instructor *may* provide specific instructions on what to enter. If so, be sure to enter this information EXACTLY as instructed.

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor's MasteringPhysics course. To access your course from now on, simply go to www.masteringphysics.com, enter your Login Name and Password, and click **Log In**. If your instructor has

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created assignments, you can access them in the **Assignments Due Soon** area or by clicking **View All** in this area. Otherwise, click on **Study Area** to access self-study material.

Support

Access Customer Support at www.masteringphysics.com/support, where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Additional contact information for Customer Support, including Live Chat

Please note that some problems in any given assignment may not be for credit. You can identify which problems are for credit by looking at the point value immediately after the problem number. The problems assigned zero credit are for your extra practice if you choose to take advantage of them, which you are encouraged to do.

You will also be required to keep a homework notebook with your written solutions, which will be collected weekly and graded. Your neatly written solutions to all the homework problems must be turned in to the mailbox labeled “**1710.002 – LIN**” near the south end of the 2nd floor hallway in the Physics Building by the same due date and time as for the homework on the server. It is recommended that you use loose-leaf paper and just turn in one week’s work at a time because of space restraints. Be sure to staple all your work together and **put your name on your papers**. Your graded work will be returned to you in the alphabetized column of open boxes labeled “**Physics 1710**” to the right of where homework is handed in. Every effort will be made to return graded homework to these boxes within one week of the due date. *It is recommended that you photocopy your work before handing it in.* Homework problems will be discussed in recitation.

Homework grading policy:

- a. The computer-generated score is to be the starting point for determining your grade.
- b. If you have earned computer credit for a problem, you must show sufficient work in your written HW to retain that credit. For each such problem, the grader will verify that:
 - i. there is an explanation of the problem’s solution in your written work;
 - ii. the solution presented is reasonable, i.e., essentially correct as shown;
 - iii. there is sufficient detail in the explanation to allow someone to understand all the steps of the solution.If these three conditions are clearly not met, then you will receive reduced or no credit for the problem.
- c. If you are unsuccessful in obtaining the correct numerical solution to a problem, but have done work that you believe to be conceptually correct, **indicate clearly on your written solutions that you would like the problem to be graded for partial credit**. These problems will be graded on the basis of the correctness of the work presented, and may be assigned up to 90% of full credit.

Ancillary Materials

Blackboard Learn will be used to post some useful course materials and your grades. To get to this resource, go to <http://learn.unt.edu> 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 Power Point presentations from lecture, copies of old exams with keys, the equation sheets for exams, and you will be able to access your exam and quiz grades.

A Help Room (location to be announced) is staffed weekday afternoons by a teaching assistant to assist you with questions regarding any aspect of the course, including homework assignments. Hours will be posted on the door of the Help Room, as well as at the beginning of lecture. TA contact information will also be posted on the Help Room Door.

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 2018 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

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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.

Note to Members of TAMS

The Texas Academy of Mathematics and Science (TAMS) administration has made the following 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.