

Mechanics, Physics 1710.002, Spring, 2013

Lecture Section 002, Physics Room 102, Mo, We, Fr 12:00–12:50 p.m.

Professor: Yuri Rostovtsev,
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Text: “Sears&Zemansky’s University Physics” 13th Edition by Young and Freedman, Addison Wesley You will also need a Responsive Innovations Response Card, Part No. RCRF-01, distributed by Turning Technologies, LLC. Class attendance will be determined by your participation using the response card

Topics and General Information: Introduction to Newton’s Laws of motion in one, two and three dimensions; conservation principles involving work, kinetic energy and potential energy; momentum; rotational motion; gravitation; periodic motion; mechanical waves; and, introduction to the 1st and 2nd Laws of thermodynamics.

Suggested Material: It is suggested that you obtain access to MasteringPhysics at www.masteringphysics.com. There is an additional fee for this service from the text publisher Pearson. MasteringPhysics will contain tutorials and practice homework problems.

Grading: There will be three 90 min exams given on Friday on February 22, March 29 and April 26 in the Business Leadership Building Room 180 starting at 3:00 P.M. If you have a conflict with an exam time, contact your instructor for an alternate time at least one week before the scheduled time. There will be no make-up exams. There will be a comprehensive final exam on Wednesday, May 8th, from 10:30 a.m. to 12:30 p.m. Attendance at lecture and recitation is required. You must download your homework assignment, work the problems. Your neatly written solutions to all the homework problems must be put in the mailbox labeled “1710—Rostovtsev” near the south end of the 2nd floor hallway in the Physics Building by the due date. Selected homework problems will be discussed in recitation. Your grade will be based on your exams, homework assignments, attendance, recitation quizzes, and final as follows:

Exams	450 points (3 exams 150 points each), and 300 points for the final*
Homework	150 points
Lecture & Recitation	100 points for lecture and recitation quizzes
Bonus problems	_____
Total	1000 points

*If your final exam grade is higher than your overall grade calculated by the method indicated above, your final exam grade will be used for your course grade.

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

The University of North Texas is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

Spring 2013, Physics 1710.002, Tentative Lecture Schedule

Session	Date	Day	Chapter, Topic
1	Jan 14	M	Ch. 1: Units, Physical Quantities
2	Jan 16	W	Vectors
3	Jan 18	F	Ch. 2: Motion Along a Straight Line
-	Jan 21	M	No class, Martin Luther King Day
4	Jan 23	W	Motion along a straight line continued
5	Jan 25	F	Ch. 3: Motion in Two or Three Dimensions
6	Jan 28	M	Motion in two and three dimensions continued
7	Jan 30	W	Motion in three dimensions
8	Feb 1	F	Ch.4: Newton's Laws of Motion. 1 st Law
9	Feb 4	M	Newton's 1 st and 2 nd Laws
10	Feb 6	W	Newton's 3 rd Law. Examples
11	Feb 8	F	Examples continued
12	Feb 11	M	Ch. 5: Applying Newton's Laws
13	Feb 13	W	Applying Newton's Laws continued
14	Feb 15	F	Ch. 6: Work and Kinetic Energy
15	Feb 18	M	Work and kinetic energy continued
16	Feb 20	W	Kinetic energy continued
17	Feb 22	F	Ch. 7: Potential Energy and Energy Conservation
Exam 1	Feb 22	F	Ch. 1-6. Business Leadership Building (BLB) Rm 180
18	Feb 25	M	Energy conservation
19	Feb 27	W	Examples
20	Mar 1	F	Ch. 8: Momentum, Impulse, and Collisions
21	Mar 4	M	Impulse and collisions
22	Mar 6	W	Impulse and collisions continued
23	Mar 8	F	Ch. 9: Rotation of Rigid Bodies
-	Mar 11	M	No class, Spring Break
-	Mar 13	W	No class, Spring Break
-	Mar 15	F	No class, Spring Break
24	Mar 18	M	Rotation of rigid bodies continued

25	Mar 20	W	Rotation of rigid bodies continued
26	Mar 22	F	Ch. 10: Dynamics of Rotational Motion
27	Mar 25	M	Dynamics of rotational motion continued
28	Mar 27	W	Dynamics of rotational motion continued
29	Mar 29	F	Ch. 13: Gravitation
Exam 2	Mar 29	F	Chs. 7-10. BLB Rm 180
30	Apr 1	M	Gravitation continued
31	Apr 3	W	Ch. 14: Periodic Motion
32	Apr 5	F	Periodic motion continued
33	Apr 8	M	Periodic motion continued
34	Apr 10	W	Ch. 15: Mechanical Waves
35	Apr 12	F	Mechanical waves continued
36	Apr 15	M	Ch. 16: Sound and Hearing
37	Apr 17	W	sound and hearing continued
38	Apr 19	F	Ch. 17: Temperature and Heat. Selected topics. Ch. 18: Thermal Properties of Matter. Selected Topics.
39	Apr 22	M	Ch. 19: 1 st Law of Thermodynamics. Selected Topics.
40	Apr 24	W	Ch. 20: 2 nd Law of Thermodynamics. Selected Topics.
41	Apr 26	F	Selected topics continued
Exam 3	Apr 26	F	Chs. 13-15, 17, 18, 19, 20. BLB Rm 180
42	Apr 29	M	Review for final exam
43	May 1	W	Review for final exam
44	May 3	F	No class, reading day

FINAL EXAMINATION—Comprehensive—Wednesday, May 8th, from 10:30 a.m. to 12:30 p.m.

Physics 1710 Goals and Learning Strategies

The goals of instruction in Physics 1710 are to lead and to guide you to understand and master the fundamentals of elementary electromagnetism and optics, and to develop your skills of analysis using the mathematical tools of algebra and calculus. 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 and respond promptly via the ResponseCard™** technology as directed by your instructor.
- (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** or during office hours at rost@unt.edu whenever you have an observation or question.
- (6) **Come to class prepared:** bring a calculator, your text book and, above all, your ResponseCard™ in order to participate and take full advantage of the lecture hall learning experience.

In this course we are using an Electronic Student Participation (ESP) system. After you have enrolled your hand-held keypad, you will be able to respond to questions, quizzes and polls that the instructor poses during the lecture and receive credit for participation, as well as immediate feedback and assessment of your understanding. ***Only when you participate via the keypad will you be credited with attending the class***, after the initial enrollment period. The motivation for this technology is an improved and more effectual learning environment. The procedure will be as follows:

- (1) You will see a PowerPoint™ slide presented that asks a question.
- (2) You will be given time to think about the question and select from several possibilities by pressing the letter or number on your keypad corresponding to your choice. Animation clues or timers will indicate when you should answer.
- (3) You will confirm that the system has accepted your input when your Participant ID number changes color on the screen.
- (4) Your answer will be recorded for the instructor to credit you with participation, and the overall results of the activity can be presented to the class in real time as programmed by the instructor.

To make your ResponseCard™ work in the lecture hall:

- (1) You must provide the instructor with the six-character alpha-numeric code located on the back of your keypad, immediately underneath the bar code.
- (2) You must set the keypad channel to match that of the receiver in the lecture hall. Do so by depressing "GO" (causing the keypad LED to blink red-green) followed by "7" and "3." At this point, if the LED is green, you are ready. If the LED continues to flash, press "GO" one more time, which should cause the LED to become green.

Ancillary Materials

Blackboard Vista 4.2 will be used to post some useful course materials and your grades. To get to this resource, go to <http://ecampus.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. Please note that if you wish to communicate with the instructor via email, you will get a much faster response if you use rost@unt.edu instead of the mail facility in Blackboard.

Also available for your extra problem-solving practice is a text similar to the one used for this class, with a full set of solutions for all of the problems in the backs of the chapters. These materials are on reserve in the [Science and Technology Library](#).

A Help Room (Physics Room 117) 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.

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 in Marquis Hall 134.