

PHYSICS 1710, Mechanics, Summer 2017

Lecture Section 001, GAB 105, MTWTh 8:00–9:50 a.m.

Recitation Section 201, Cury 204, TTh 10:00–10:50 a.m.

Professor: Yuri Rostovtsev
Office: GAB Bldg., Room 5251
Telephone: (940) 565-3281
E-mail: rost@unt.edu
Office Hours: M 3:00-5:00 p.m., and by appointment

Course Materials: The recommended text is *University Physics*, 13th or 14th Edition, by Young and Freedman (Pearson). Other calculus-based introductory physics texts are acceptable.

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, and gravitation; and fundamental concepts from thermodynamics including temperature and heat, the ideal gas law, and the 1st and 2nd laws of thermodynamics.

Attendance/Participation: Class attendance helps with learning, and so you are expected to attend all lectures and recitations. Your grade will depend upon class participation; this includes taking weekly written lecture and recitation quizzes.

Exams: There will be three exams during the semester, and a comprehensive final exam, on Friday, July 7. Exam questions will be based on lecture material, material contained in the text and in the homework assignments. For free-response problems, you must show all of your work on your exam paper for full credit. **There will be no makeup exams.**

Homework: All homework will be posted on Blackboard. You will be required to turn in written solutions to homework problems, which will be collected weekly and graded. Your neatly written solutions to the homework problems requiring such must put in the mailbox labeled “1710 – Rostovtsev” near the south end of the 2nd floor hallway in the Physics Building by the due date. It is recommended that you make a copy of your written solutions before submitting them. Address all problems with the homework server to your instructor.

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

| | |
|----------------------|---|
| Exams | 1 st exam 15% ; 2 nd exam 15% ; 3 rd exam 15% ; final exam 25% |
| Homework | 20% |
| Lecture & Recitation | 5% for lecture Quizzes, 5% for recitation participation |
| Bonus Problems | |
| 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 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](tel:940.565.4323).

UNT's policy on Academic Dishonesty can be found at: <http://www.vpaa.unt.edu/academic-integrity.htm>
Drop information is available in the schedule of classes at: <http://registrar.unt.edu/registration/schedule-of-classes>

Tentative Lecture Schedule – *subject to amendment by the instructor*

| Week of | | |
|---------------|---|--------------|
| Jun 4 | Ch. 1: Ch. 1, Units, Physical Quantities, Vectors, Ch. 2: Motion in One Dimension Ch. 3: Motion in Two and Three Dimensions, Ch. 4: Newton's Laws of Motion Ch. 5: Applications of Newton's Laws, | HW 1 |
| Jun 11 | Ch. 7: Ch. 6: Work and Kinetic Energy, Potential Energy and Energy Conservation, Ch. 8: Momentum and Impulse Exam I (Jun 13) Ch. 9: Rotation of Rigid Bodies | HW 2 |
| Jun 18 | Ch. 10: Dynamics of Rotational Motion, Exam II (Jun 22) Ch. 13: Gravitation, Ch. 14: Periodic Motion, | HW 3 |
| Jun 25 | Ch. 15: Mechanical Waves, Ch. 16: Sound and Hearing, Ch. 17: Temperature & Heat, Exam III (Jun 29) | HW 4 HW 5 |
| Jul 2 | Ch. 18: Thermal Properties of Matter Ch. 19: The 1 st Law of Thermodynamics, Ch. 20: The 2 nd Law of Thermodynamics Summary and Review | |
| Jul 7 | Final Exam (Scheduled on Friday, July 7, time 8:00am-9:50am, in GAB 105) | |

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.

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

Materials

Blackboard Learn will be used to post the 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 PowerPoint presentations from lecture, extra problems with solutions for practice, copies of old exams, and you will be able to access your exam and quiz grades.

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 end-of-chapter problems.

Supplemental Instruction is also available for this course. Please check Blackboard for details.

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.

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 summer terms, the SPOT is open for students to complete six days preceding their final exam. See [SPOT Calendar](#) for specific dates and deadlines.