

Physics 1710: Mechanics

Fall 2026

Lecture Section 200, TuTh 8:00 am – 9:20 am in Chemistry Building Rm 106

Recitation Section 206, TuTh 10:20 am – 11:15 am in Sage Hall Rm 356

Recitation Section 207, TuTh 11:30 am – 12:25 am in Sage Hall Rm 356

Instructor Information

Instructor: Mikaila Lapinski M.S. (mikailalapinski@my.unt.edu)

Office: PHYS 209

Drop-in Office Hours: Monday, Wednesday 8:00 am – 12:00 pm

Teaching Assistants: Hank Atwater (hankatwater@my.unt.edu)

Hello! 😊 I am a PhD student here at UNT. My research area is in quantum optics (how light and matter interact) with my current work focusing on modeling biophotons. I have a great interest in promoting interdisciplinary research and my goal this semester is to foster a positive learning environment where you can be curious and hopefully gain a new appreciation for the physics happening around you! I encourage you to find connections between the topics we will cover in this course and your specific interests/career paths. While physics can be very difficult, I believe that everyone is capable of learning this material. I aim to help build confidence in your math and physics skills so that you can apply them to your life and career!

Course Description, Structure, and Objectives:

This a Calculus-based Physics I course will survey major subject areas in classical physics including principles and applications of Newton's Laws of linear and rotational motion, work and energy, linear and angular momentum, mechanical conservation laws, oscillatory motion, waves, fluids, and gravity.

Lectures will include discussions, demonstrations, interactive conceptual and quantitative questions to understand the fundamental laws of nature and develop problem-solving skills. At the completion of the course, you should be able to apply these concepts in everyday situations and your future career.

Course Objectives

This course is a part of the Life and Physical Sciences Core. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences by fostering skills associated with the four core objectives:

- **Critical Thinking Skills**, including creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Communication Skills**, including effective development, interpretation and expression of ideas through written, oral, and visual communication
- **Empirical and Quantitative Skills**, including the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- **Teamwork**, including the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

This syllabus is subject to change. If a change is made, the instructor will notify you using Canvas.

Course Structure

This class is classified as “In-Person” which requires in-person participation during the scheduled class periods and recitations. We will use a combination of active group work, lectures, demonstrations, discussions, interactive conceptual and quantitative questions, homework, and more to achieve these goals. At the same time, this course has digital components. To fully participate in this class, students will need internet access to reference on the Canvas Learning Management System.

Tentative Course Schedule:

Week	Date	Lecture Topic	Recitation
1	8/18	Ch. 1: Units, Ch. 2: Vectors	Recitation 1a
	8/20	Ch. 2 continued	Recitation 1b
2	8/25	Ch. 3: 1D motion	Recitation 2a
	8/27	Ch. 4: 2D motion	Recitation 2b
3	9/1	Ch. 4 continued	Recitation 3a
	9/3	Ch. 4 continued	Recitation 3b
4	9/8	Ch. 5: Newton’s Laws	Recitation 4a
	9/10	Ch. 5 continued	Recitation 4b
5	9/15	Ch. 6: Application of Newton’s Laws	Recitation 5a
	9/17	Ch. 6 continued	Recitation 5b
6	9/22	Exam 1 (Chapters 1-5)	Recitation 6a
	9/24	Ch. 7: Work and Kinetic Energy	Recitation 6b
7	9/29	Ch.8: Potential Energy and Conservation of Energy	Recitation 7a
	10/1	Ch. 8 continued	Recitation 7b
8	10/6	Ch. 9: Linear Momentum	Recitation 8a
	10/8	Ch. 9 continued	Recitation 8b
9	10/13	Ch. 9 continued	Recitation 9a
	10/15	Ch. 10: Fixed-Axis Rotation	Recitation 9b
10	10/20	Exam 2 (Chapters 6-9)	Recitation 10a
	10/22	Ch. 10 continued	Recitation 10b
11	10/27	Ch. 11: Angular Momentum	Recitation 11a
	10/29	Ch. 12: Static Equilibrium and Elasticity	Recitation 11b
12	11/3	Ch. 12 continued	Recitation 12a
	11/5	Ch. 13: Gravitation	Recitation 12b
13	11/10	Ch. 13 continued	Recitation 13a
	11/12	Ch. 14: Fluid Mechanics	Recitation 13b
14	11/17	Exam 3 (Chapters 10-13)	Recitation 14a
	11/19	Ch. 15: Oscillations	Recitation 14b
15	11/24	Thanksgiving Break – No Classes	
	11/26		
16	12/1	Ch. 16: Waves	Recitation 15a
	12/3	TBD	Recitation 15 b
17	12/8	Final Exam 8:00 am-10:00am	

How to Succeed in this Course

To be successful in this course you must actively participate in taking in the information (from lecture and reading) and outputting the information (through solving problems and discussing with classmates). I encourage you to **ask questions**, even if that question has already been answered or it is about material that was covered weeks ago.

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Support

If you find yourself needing help after attempting the homework or studying on your own, please know there are many options available to you.

- Ask a classmate or work with a study group
- Ask one of your TAs or myself during our drop-in office hours
- **FREE** tutors provided by the Physics Resource Center (Hickory Hall 226)
 - Drop in with questions. There is also plenty of space and computers in the room. You can do your homework in the resource center and if you get stuck, there are tutors available to help right away.
- UNT Learning Center's Lead Tutors

Required Materials

Textbook: University Physics Volume 1 by Moebs, Ling, and Sanny available free online at [OpenStax.org](https://openstax.org)

Assessing Your Work

Grades will be determined by the following percentages of the total points:

Daily Warm-Up	5%
Guided Readings	5%
Problem Sets	10%
Recitation	10%
Exams	50%
Final Exam	20%
Total	100%

The final class letter grade depends on your course percentage:

$A \geq 89.50\%$
$79.50 \leq B < 89.50\%$
$69.50 \leq C < 79.50\%$
$59.50 \leq D < 69.50\%$
$F \leq 59.50\%$

Daily Warm-Up

At the beginning of each lecture, students will be asked to complete a daily warm-up exercise by hand. These exercises will range from simple problems to writing brief summaries about recently covered topics. Two Warm-Up grades may be excused for every 5 weeks of class.

Homework

Homework gives you the opportunity to practice the material, which is key to understanding physics. I encourage you to begin the homework assignments early, as it is unlikely you will be able to complete them in one sitting. All homework assignments need to be written by hand. You may use a tablet with a stylus, of course, but any work that is typed will not be accepted.

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Guided Readings: Before the first class each week students are to read the chapters of the book that are being covered that week. Guided reading will help the students through each chapter and highlight key concepts, vocabulary, and equations. Guided readings must be written by hand, but will be submitted to Canvas as a pdf.

Problem Sets: Each week you will be assigned about 12 problems to solve. All problem sets must be worked out, written by hand, and turned in on paper in person. You may work on homework with a group, but all students must submit work individually.

Equation Sheets: While not strictly an assignment for a grade, each student is responsible for writing their own equation sheet for exams. The guided reading will help you add relevant equations. The purpose of not giving students an equation sheet is to ensure each student knows what each equation is and does.

Recitation

The purpose of recitation is to practice problems with your classmates and to ask questions:

- Recitation attendance is required.
- There will be one assignment in recitation each week that you will work as a group to complete. You will be required to upload a photo of your group's work to Canvas. **You must be present at recitation to receive points from recitation assignments.**
- Two recitation grades may be excused for every 5 weeks of class. (6 total dropped recitation grades). For example, if a student needs to miss Recitations 1b, 3a, and 5b for any reason, two of those absences will be excused but the third will count as a zero.

Exams

The final way for you to demonstrate your mastery of the course content is through examination.

- There are *three* 80-minute exams during normal class times. Each exam focuses on newly covered topics but may require prior physics knowledge to answer. The exams will be held as indicated in the schedule at the end of the syllabus.
- All exams will be in-class and are closed book, but you may bring your own equation sheet which must be handwritten written on one or both sides of an 8.5 x 11in piece of copy paper. **No equation sheet will be provided.**
- Exams will be taken in the normal classroom, PHYS 104.
- There are no make-up exams. It is sometimes possible to take the exam with a different course section if you inform the instructor ahead of time.
- If you miss an exam for an approved reason, your final exam score will be used as a your missing exam score. Missing more than one unit exam may result in a grade of Incomplete.
 - Approved absences include University approved events with accompanying letter/invitation; documented illness; documented legal or traffic emergency.
 - If you wake up sick on the day of an exam, you must contact the instructor before the exam begins to explain your absence otherwise a doctor's note will be required to approve the absence.
- The lowest exam grade will be replaced by the final exam grade.

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- Anyone that is found cheating on an exam (communicating with anyone else, allowing another student to view their work, using any technology not explicitly permitted by the instructor) will receive an automatic zero on the exam.
- Questions about exam grading must be directed to the instructor in writing within one week of receiving your graded exam.

The final exam will be **Tuesday Dec. 8th at 8:00 am – 10:00 am**. The final exam will be cumulative.

Unauthorized Aids During Examinations and Assessments

Students may use only those materials and resources that are expressly authorized by the instructor for a particular examination or assessment. Touching, holding, or accessing any unauthorized aid during the examination period constitutes a violation of the Student Code of Conduct, regardless of whether the aid is used.

Any item that may be considered an unauthorized aid must be kept out of view and in a closed container (e.g. zipped backpack, buttoned purse, etc.) during the entirety of the examination or assessment.

Unless specifically authorized in writing by the instructor, prohibited aids include, but are not limited to:

- Mobile phones and smartphones
- Smartwatches and fitness trackers with communication, recording, or internet capabilities
- Tablets, laptops, and other computing devices
- Earbuds, headphones, and other audio devices
- Smart glasses, cameras, recording devices, and wearable technology
- Artificial intelligence (AI) tools, chatbots, and other generative AI technologies
- Notes, textbooks, study guides, formula sheets, or reference materials
- Any other device, material, or resource not expressly permitted by the instructor

Students are responsible for clarifying any questions about permitted materials before the examination begins.

Bonus Essay

Near the end of the semester, you will be assigned to write a short essay (about 500 words) over an interesting physics topic that will be posted later. This essay grade will act as a bonus 5% to recover any missed homework or guided reading scores. You will be asked to turn in a typed version of the essay onto Canvas, then during class time you will write a written version of the essay in a Blue Book that must be purchased from the bookstore (they are about \$1).

Attendance and Participation

Being punctual indicates our respect for others. Please arrive before class begins to find a seat, prepare your materials, and connect with your peers. The beginning of class is especially critical – just like the beginning of a movie or book. Being late to class is sometimes inevitable. If you are late, know that you are welcome to join the class, but please do so without distracting others. You are expected to be engaged in lecture, contribute when you can, and participate fully in recitation by staying on task and communicating with your classmates, TA, and instructor.

“AI” Policy

The use of Large Language Models (LLMs) like ChatGPT or other generative “AI” tools to solve homework problems or for further studying is strongly discouraged. Use of generative “AI” to solve homework

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problems will not help you prepare to solve problems on your own. If you would like extra problems to practice preparing for exams, please just ask me or consult the examples in the textbook. There are many free resources available to help you break down problems like me, the TAs, and physics tutors located in the PIC.

Technical Support

The UIT Helpdesk will provide support with any issues you might have with Canvas, and they may be able to help you troubleshoot other computer issues. 940-565-2324 or helpdesk@unt.edu. Canvas does not work well with some browsers. Chrome browser does support Canvas.

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 online 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. You will receive an email from “UNT SPOT Course Evaluations” from no-reply@iasystem.org with the survey link. You will have separate SPOT evaluations for lecture, recitation, and lab. During fall and spring semesters SPOT surveys are open to students to complete two weeks prior to final exams.

UNT Policies

Academic Integrity Standards and Consequences

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

ADA Accommodation Statement

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 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 at disability.unt.edu.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

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.

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