

PHYSICS 2220
Electricity and Magnetism
Fall 2019

Lecture Section 001, PHYS 102, MWF 12:00 pm - 12:50 pm
Recitation Section 201, W 3:30 pm – 5:20 pm, PHYS 311
Recitation Section 202, F 1:00 pm – 2:50 pm, PHYS 311
Recitation Section 203, TR 11:30 pm – 12:20 pm PHYS 311
Recitation Section 204, MW 1:00 pm – 1:50 pm, PHYS 311
Recitation Section 205, MW, 2:00 pm – 2:50 pm, PHYS 311

Professor: Vincent Lopes
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E-mail: Vincent.Lopes@unt.edu
Office Hours: Monday 2:00 pm – 3:00 pm, Thursday 12:30 pm – 2:00 pm, and by appointment

Course Materials:

The recommended text is *University Physics*, 13th, 14th, or 15th Edition, by Young and Freedman (Pearson). Other calculus-based introductory physics texts are acceptable; ***the successful student will have a text.*** You are required to obtain access to the Mastering Physics online homework system.

Topics:

This course will cover electric fields, direct-current and alternating-current circuits, magnetic fields and magnetic induction, electric and magnetic properties of matter, electromagnetic waves, and geometrical and wave optics.

Physics 2220 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.

Class Policies

- 1) Students are to attend class and recitations regularly as scheduled.
- 2) Students are to be prepared for class (read/review assigned chapters prior to lecture).
- 3) **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.
- 4) Pertinent questions should be directed to the instructor. Patience with other student's questions is expected behavior.
- 5) *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 test or Final Exam days.*
- 6) Students are expected to **participate** by answering in-class questions, and taking weekly written recitation quizzes/questions.
- 7) **Silence mobile phones prior to attending class. Put mobile phones away.**

Exams:

- 1) There will be three 90-minute exams during the semester, to be given starting at 4:00 pm on Friday afternoons, and a comprehensive final exam, to be given at **10:30 AM on Wednesday, December 11th**. Exam questions will be based on lecture material, material contained in the text and in the homework assignments. You must show all of your work on your exam papers for full credit. 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.
- 2) There will be no makeup exams.
- 3) Students are to provide their own pencil, eraser, ink pen and calculator. Phone calculators CANNOT be used.
- 4) Students CANNOT share pencils, erasers, pens or calculators during tests or the final exam.
- 5) Multiple answers to the same question will be marked wrong automatically.
- 6) Answers / work deemed to be illegible by the instructor will be marked wrong.
- 7) **Any student caught cheating will be given a grade of zero for any exam.**
- 8) Questions pertaining to the grading of exam questions and problems must be directed to the instructor in writing **within two weeks** after the tests are returned to the class.

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.

Grades:

The course grades will be calculated as follows:

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

Letter grades will be assigned on the basis of the following numerical scores:

90 —100 = A

80 – 89 = B

70 - 79 = C

60 - 69 = D

Grades will NOT be rounded or scaled.

89.99 = B

69.99 = D

Lab Credit:

You must enroll separately in Physics 2240 for laboratory science credit.

Topic Schedule – the instructor reserves the right to amend the topic schedule.

1	26-Aug	M	Introduction and Ch. 21, Electric charge and electric field
2	28-Aug	W	Ch. 21, continued
3	30-Aug	F	Ch. 21, continued
-	2-Sep	M	<i>No class Monday, Sept. 4 – Labor Day Holiday</i>
4	4-Sep	W	Ch. 21, continued and Ch. 22, Gauss's Law
5	6-Sep	F	Ch. 22, continued
6	9-Sep	M	Ch. 22, continued
7	11-Sep	W	Ch. 23, Electric Potential
8	13-Sep	F	Ch. 23, continued
9	16-Sep	M	Ch. 23, continued
10	18-Sep	W	Ch. 24, Capacitance and dielectric
11	20-Sep	F	Ch. 24, continued
	20-Sep	F	Exam # 1 in GAB 105
12	23-Sep	M	Ch. 24, continued
13	25-Sep	W	Ch. 25, Current, resistance, and emf
14	27-Sep	F	Ch. 25, continued
15	30-Sep	M	Ch. 25, continued
16	2-Oct	W	Ch. 26, DC circuits
17	4-Oct	F	Ch. 26, continued
18	7-Oct	M	Ch. 26, continued
19	9-Oct	W	Ch. 27, Magnetic field and magnetic forces
20	11-Oct	F	Ch. 27, continued
21	14-Oct	M	Ch. 27, continued
22	16-Oct	W	Ch. 28, Sources of magnetic field
23	18-Oct	F	Ch. 28, continued
	18-Oct	F	Exam # 2 in GAB 105
24	21-Oct	M	Ch. 28, continued
25	23-Oct	W	Ch. 28, continued
26	25-Oct	F	Ch. 29, Electromagnetic induction
27	28-Oct	M	Ch. 29, continued
28	30-Oct	W	Ch. 29, continued
29	1-Nov	F	Ch. 30, Inductance
30	4-Nov	M	Ch. 30, continued
31	6-Nov	W	Ch. 30, continued
32	8-Nov	F	Ch. 31, Alternating current
33	11-Nov	M	Ch. 31, continued
34	13-Nov	W	Ch. 31, continued
35	15-Nov	F	Ch. 32, Electromagnetic waves
36	18-Nov	M	Ch. 32, continued
37	20-Nov	W	Ch. 32, continued
38	22-Nov	F	Ch. 33, Nature and propagation of light
	22-Nov	F	Exam # 3 in GAB 105
39	25-Nov	M	Ch. 33, continued
40	27-Nov	W	Ch. 33, continued
	29-Nov	F	<i>No class Friday, Nov. 29 – Thanksgiving Holiday</i>
41	2-Dec	M	Ch. 34, Geometrical optics
42	4-Dec	W	Ch. 34, continued
-	6-Dec	F	<i>No Class, Reading Day</i>
Final	11-Dec	W	FINAL EXAM —Comprehensive— 10:30 am to 12:30 pm, PHYS 102

Physics 2220 Goals and Learning Strategies:

The goals of instruction in Physics 2220 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 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.** (Again, **silence your mobile phone and put it away.**)
- 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. If you get stuck on a problem (for instance, after 3 unsuccessful attempts, or 20 minutes of effort), move on to the next problem and bring your questions to recitation, the Physics Instructional Center help room, or your instructor.
- 5) **Communicate with your instructor** via e-mail at Vincent.Lopes@unt.edu or during office hours whenever you have an observation or question. **Be specific with your questions.**
- 6) **Come to class prepared!**
- 7) **Work extra practice problems**, such as from the text's end-of-chapter problems.

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

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](tel: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, test expectations 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 8 pm

Thurs 10 am to 8 pm

Fri 10 am to 4 pm

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. In addition to SPOT, there will be a brief in-class course survey during the last two weeks of the semester.

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



Get Started with Pearson's Mastering Physics

First, make sure you have these 3 things...

1. **Email:** You'll get some important emails from your instructor at this address.
2. **Course ID:** Ask your instructor for your Course ID!
3. **Access code or credit card:** An access code card may be packaged with your new book or may be sold by itself at your bookstore. Otherwise, you can buy instant access with a credit card or PayPal account during registration.



Next, get registered and join your course!

1. Go to [Pearson Mastering Physics webpage](#).
2. Under **Register Now**, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's **Course ID (MPLOPES5374719)**, and choose **Continue**.
5. Enter your existing Pearson account username and password and select **Sign in**. You have an account if you've ever used a Pearson MyLab & Mastering product, such as MyLab Math, MyLab IT, or Mastering Chemistry.
 - 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 was purchased separately from the bookstore.
 - Buy access using a credit card or PayPal account.
7. From the "You're Done!" page, select **Go to My Courses**.
8. Select **Yes** and enter your **Course ID** to join your course. Click **Continue**. Course title is **UNTPHYS2220MWFLOPESFALL2019**.
9. If asked, enter your **Student ID** according to the instructions provided and click **Continue**. That's it! You should see the course home page for the course.

To sign in later:

1. Go to [Pearson Mastering Physics webpage](#) and select **Sign In**.
2. Enter your Pearson account username and password from registration, and select **Sign In**.
 - If you forgot your username or password, select **Forgot your username or password?**

To join another course for the same textbook (no additional purchase needed):

1. Sign in with the username and password that you specified during registration.
2. Select **My Courses** in the upper left and then choose **Join a Course**.
3. Enter the **Course ID** from your instructor and click **Continue**.
4. If asked, enter your **Student ID** according to the instructions provided and click **Continue**.
5. To switch courses, select **My Courses** from the course menu (left side).
6. Select any active course link that appears below **Switch to another course**.
7. The next time you sign in to Mastering, your course view will match the last course you chose.

If you have a technical issue: Contact [Pearson Support](#).