

Physics Lab Syllabus

Introduction and General Information

Hello, dear students. Welcome to the physics lab.

You are here if you have one of our four lab classes: General Physics I and II or Laboratory for Physics 2320 and 2321, also known as Introductory Mechanics and Electromagnetism. The general rules for the labs are the same. The difference is in the material we cover inside the lab. All labs will be held in the Physical Science Building. General Physics I Lab will be in room 316. General Physics II Lab will be in room 319. The laboratory for Physics 2320 will be in room 322. Finally, the Laboratory for Physics 2321 will be in room 318.

I am Karla Carmona. I am the lab coordinator. I will not be teaching the labs myself; a competent team of teaching assistants will serve as the lab instructors. I ensure that all lab instructors complete their work and are prepared to guide you in the lab. Any question or concern should be addressed with them first. Their contact information will be given in an announcement posted on Blackboard at the beginning of the lab for future reference. If there is no resolution, please do not hesitate to contact me. If you notice an error or an inconsistency in the material, please let me know so I can make the necessary corrections. My office is located in the Physical Science Building, Room 317. My email is kcarmona@utep.edu. At the end of the semester, I will collect all your final grades and submit them to the correct professor to determine your final course grade.

Course Objectives

The course aims to help you better understand some of the most basic physics concepts covered in your lectures. We also want to introduce you to setting up an experiment to test a hypothesis in a controlled environment. We will start our classes in the third week of the semester to give you time to understand the first concepts in your lecture before experimenting. Because the lab is only ten labs long, we may be ahead of your lecture by the end of the labs. Do not worry. We have videos and activities to help you understand the concepts before the lab.

The physics lab for General Physics courses is just a percentage of the total grade in your course. That course will be recorded with a letter grade on your transcript at the end of the semester. To know how much a certain number of points will change your final grade, multiply it by the percentage your lecture teacher allocated for the lab, divide by 100, and add it to your lecture grade. Remember, your lab grade is not converted to a letter grade at any point. At the end of the semester, your final lab grade will be computed by adding all the points earned in the lab and dividing by ten. That number will be sent to your lecture teacher to calculate your final physics grade. Your lecture instructor will provide you with their contact information and the specific weight of the lab grade in their lecture syllabus.

The physics labs for PHYS 2320 and 2321 are worth one credit. The final lab grade will be converted from a numerical value to a letter grade. This grade will not affect your lecture grade. The conversion rate is different from other courses, which allows you to miss one or two labs without missing your opportunity to get an A on the transcript. The final lab grade will be computed by adding all the points earned in the lab and dividing by ten. Afterward, it will be changed to a letter according to a table that will be announced later in the semester. That letter will be sent to your lecture teacher so they can enter it into the system.

The physics labs for General Physics I and PHYS 2320 will be called Mechanics Labs. In those labs, we will start understanding a position vs. time graph. In lab #2, we will study how to calculate the velocity in a system where the velocity is constant. From lab #3 to lab #5, we will analyze constant acceleration created by forces (labs #3 and #4) and produced by an inclined plane (lab #5). For lab #6, we will work with a two-dimensional problem and learn that the link between a horizontal and vertical motion is only time. Pulleys will be manipulated in lab #7 to see a simple machine's power. Momentum and Kinetic Energy will be studied in collision cases during lab #8. Friction and Harmonic Motion will be introduced in the last two labs.

The physics labs for General Physics II and PHYS 2321 will be called Electricity labs. In those labs, we will start exploring the effect of the different charges we can have on the objects. In lab #2, with a little more structure, we will examine the impact of positive and negative charges in grounded and isolated settings. We will explore Ohm's law for lab #3, learning how to measure voltage and current. In lab #4, we will explore the relation between capacitance and distance among parallel plates. Kirchhoff's rules will be tested during lab #5. We will work again with capacitors in lab #6. Still, this time, we will analyze the charging and discharging times while considering the resistance in the circuit. In lab #7, we will observe the magnetic field's force on different currents. Faraday's law will be explored in lab #8, and Ampere's law in lab #9. Finally, lab #10 will be different for General Physics II, where we explore light and Snell's rule, and Laboratory for PHYS 2321, where we will explore the rise and decay of voltage when alternating current passes through transformers. For this reason, you will see eleven labs in your Blackboard shell, but you will only be graded on ten labs.

Grading Policy

We have already discussed the grades in this syllabus's course objectives section. We will be addressed again in the assignment section. Here, I want to recap and summarize the information. You are responsible for 40% of your grade. The quiz and attendance grades are individual, depending solely on your performance and the points you earn. The lab report is a group assignment and accounts for 60% of your lab grade. All of you must collaborate equally and on time in this effort. If a team member does not participate, they should be notified to the lab instructor so their grade can be adjusted. There are only two options for the lab report: either you get the points the team gets for the work done, or you get zero if your team reports you as a member who did not participate in the work. It is essential to recognize that if a team member fails to deliver their part of the work, the entire team will be impacted, either because the section is incomplete (resulting in a reduction of the total grade) or because other team members will have to work overtime. There will be two places to indicate who worked on the lab

report and who did not. The first is in the credit section, where you must specify who did what, and if desired, you can also indicate who did not contribute. The second is as a text in the assignment area for the lab report. Before uploading your file, you can write a note to the lab instructor detailing the complaint about who did not work.

After lab eight, you will find two new items in your grades: total points and final grade. These items are presented as a fraction. This fraction will evolve each week when your TA finishes grading more labs. But this does not make a difference; the number on top will be the number we set as final, and it can be a final if you do not keep working. The total points are only the sum of all the points you have until that moment out of the total number of points the TA has graded. The final lab grade is the total points divided by ten. Here is where we are going to ignore the bottom number. As the final grade will be the number on top of the fraction, it will increase if you keep working. Please do not consider your grade as the result of the fraction you see on Blackboard; it will only be the top number in that fraction. Blackboard color codes these fractions according to a standard table usually applicable to all your classes. But that table does not apply to this lab, so please discard the information you typically conclude when you see the color of your grade.

Grading for General Physics I and II Labs.

To be very clear, for General Physics I and II, the final lab grade is a numerical value that will be sent to your lecturer and used as a percentage of your course grade. This number will be computed by adding the grade of each lab plus the extra points earned in the practice of the lab and dividing all that by ten. As you can see, this process yields a number between 0 and just over 100. Each lab will be composed of a quiz (20 points), attendance (20 points), and a lab report (60 points). Your professor will receive a maximum of one hundred as a final lab grade. This means that the extra points serve only as a makeup for missing attendance points, for example, and will not help you as additional points in your lecture. Accumulating more than one thousand points will not bump up your lecture grade. This is intended to highlight that missing some points here and there for attendance, quizzes, or lab report problems is not the end of the world. However, striving for precision in your experiments is essential to ensure you have points to cover any previous or future losses.

If you drop the lab, the lecture will be dropped immediately, or vice versa. Remember, the courses are linked, and you cannot have one without the other. If you drop yourself or are dropped by the instructor after the deadline, you will receive a "0." No incompletes will be given for this course.

Grading for Laboratory for PHYS 2320 and 2321

For laboratories in PHYS 2320 and 2321, the lab grade will be recorded as a letter on your transcript. We have considered that this course is worth only one credit, so it should not be stressful to earn an A or risk losing it by failing one lab. The numerical final grade will be computed by adding the grade of each lab plus the extra points earned in the practice of the lab and dividing all that by ten. This lab will have a conversion table that is generous enough that, even if you fail one or two labs, you will still have the

opportunity to earn an A in the lab. First, your final lab grade will be computed by adding all your lab scores, plus any extra points, and then dividing by ten. This number, between 0 and 100, will be converted to a corresponding letter using a table to be released later in the semester. I can say in advance that you will need a grade of less than 90 to earn an A. Because you will have a letter grade in your transcript, it will be displayed after Lab 10 is closed. The letter you will see there will be the letter your lecturer will post on Goldmine.

Suppose you drop before the UTEP drop deadline. In that case, you will receive a "W." If you drop yourself or are dropped by the instructor after the deadline, you will receive an "F." No incompletes will be given for this course.

Lab Manual and Blackboard

Your lab manual is your Blackboard shell; you will not need any other manual. In the content area, you will find the different parts of the syllabus, along with a PDF summarizing everything. After the syllabus, you will find the calendar. It tells you which lab we cover each week and whether we have the week off. Following, you will see ten modules. Each module contains the materials for each lab. In lab one, we have a small activity to form our teams and the instructions to work on a small hands-on activity to start the semester. The assignment areas are for attendance and lab reports. You will also find a small video to watch in all other labs before coming to the lab. A small activity in Quizlet to cement the concepts we will be using inside the lab. A two-question quiz to mark your participation in the previously described activities. These three new items must be done at home during the previous week. Not at the last minute.

In addition to the lab materials, Blackboard features a tab for announcements. These are indications given to all the sections offered on the day. There is another tab with all your grades. Once your lab instructor grades your assignments, they will post them online. Only the lab instructor can answer when the grades will be posted. There is a tab labeled 'Groups'. There, you will enroll in your specific lab team following the instructions given inside the lab on the first day of lab classes. These groups are important because you will work on your lab report in teams, and only one member will upload the complete lab report once everybody has finished editing it. If you need to contact your whole team, a specific team member, your lab instructor, or me, use the last tab for messages.

One thing you have to have in mind when submitting anything to Blackboard is to check the submission ticket. Once you successfully submit your picture or video, you will receive an email with a submission ticket number and more information, such as the file's name. The weight of the file is also posted in that information. Anything we do here, even a small text document, carries a lot of metadata, so the files are bigger than one megabyte. If you receive a ticket that says that your file is 12 kilobytes, that is a sign that the file is corrupt, and your lab instructor will not be able to see it, and you will have a zero. So review and keep your tickets for any further clarification.

Assignments and Grading Breakdown

Each lab grade comprises three elements: a quiz, lab attendance, and a lab report. The quiz is worth 20 points, attendance is 20 points, and the lab report is 60 points. We add all of them up, and you have one hundred points for each lab. Your final lab grade will be calculated by adding the grade of each lab plus the extra points and then dividing by ten.

Quiz

The quiz closes at 7 AM on the day of the lab. It only has two questions, and you can use any available help, such as Google, Wikipedia, YouTube, textbooks, notes, etc. There is no time limit, but you must complete it before closing time. All the quizzes for the entire semester are available from the first day the content is available. You can go ahead and answer all the quizzes at the beginning of the semester and do not worry about them anymore. Also, you have five opportunities to get the maximum amount of points. The quizzes will not have a late submission opportunity. The quizzes will not be reopened for any reason, including during a Blackboard shutdown. So do them as early as possible.

Attendance

Attendance is due at 11:59 PM the day of the lab. It is a selfie picture of you in front of the frame made by the TA in the lab. The frame contains your class's CRN and the lab's date. In the picture, the three elements should be visible: your face, the CRN, and the date. You will upload that picture to the attendance and participation assignment area. You will have five more days to upload your image in case of any trouble. You miss some points as a late submission penalty, but never more than five points.

To be very clear about the attendance policy, you will receive a zero for attendance if you are absent from the room, forget to take the picture, or do not upload the image to the correct assignment area. It is no different if you miss the lab for a doctor's appointment or a UTEP-sanctioned event than if you miss it for personal reasons. You are not present; your attendance is recorded as zero. However, you are responsible for communicating with your team members as soon as possible to determine how to participate in the lab report so you do not miss those points.

Remember, first, you do not need all one thousand points to have an excellent grade in the lab. Even with 800 points, you still have the opportunity to earn an A in the course. Second, if your team earns extra points, those points will help you make up for the missing attendance points.

Of course, this policy is not a blank check to miss all the labs and still pass the lab. So, you only have the opportunity to do this five times in the semester. From the 6th absence onward, you will also have zero in the lab report. You must be present in the lab at least 50% of the sessions for excused or unexcused absences.

Lab Report

The lab report is due at 11:58 PM the day before of the following lab, seven days later. The lab report will be a video simulating a news program with the following sections:

1. Introduction. Here, you will discuss the topic we are covering in the lab, what the literature says about the phenomenon we are testing, and provide a reference that can be applied in real life.
2. Materials. A quick overview of the materials we will use, how they work if it is the first time we use them in the semester, and for what purpose we will use each element.
3. Procedure. A short video showing how you ran the experiment. This part of the video will be recorded in the lab during the experiment. At least two team members must be seen in the video. Also, a voice should explain what is happening in the experiment.
4. Data and Data Analysis. This part of the video will display the tables and graphs you generate and explain how the data was inserted into the tables and what the numbers represent. Here, you can utilize a slide presentation with a voiceover that describes each part.
5. Conclusions. Here, you will summarize what you have learned about the observed phenomena, showing your percent differences and any errors that may have occurred. You will explain what the percent error or difference means, identify possible causes for that difference or error, and discuss the implications of having such an error.
6. Credits. Here, you will inform the lab instructor what each team member contributes. Who is on screen, and who did the calculation, experiment, and video editing?

The video should be 10 to 15 minutes long. It should be uploaded as a file to the assignment area. In case the video is too big, you can paste the link to your video. Be aware that if the TA can't see the video, your grade will be zero. The lab instructor will grade the quality of each section on a scale of 0 to 10, add up all the points, and present the total as the lab report grade. Originality and attention to detail will earn ten extra points. Each section should be thorough with the information requested (3 points), present the material professionally (3 points), have a smooth transition from one section to another (2 points), and include correct captioning for ADA purposes (2 points). You can use any software you know how. Be aware that UTEP offers access to a video editing software called YUJA. You can access YUJA through Blackboard: In your Blackboard shell, in the right panel, there is a "Books and Tools" link; YUJA is at the bottom of the page. YUJA has the advantage that captioning can be automated, and you can share the video from there.

You have seven days to work on the video; the lab report will have a one-day late submission window. Due to the risk of technical issues, it is recommended that you consider this and upload your video at least 24 hours before the due date. The lab report assignment will not be reopened for any reason. We will not accept assignments outside the assigned area inside Blackboard.

Any item not delivered on time will receive an automatic zero. Due to the late submission window, your zero in attendance, or the lab report will be updated once the lab instructor has reviewed and graded the late submissions.

Course Policies

Avoid staying in the labs for extended periods without a class for your safety and equipment protection. It is a best practice to enter the room a maximum of five minutes before the lab starts and only if it is empty. You can leave the room after finishing your lab activity and taking the attendance selfie. Please avoid changing any settings on the computers. Do not bring water or other liquids inside the room; more importantly, do not place them on the tables. Return the small equipment items to your lab instructor once the lab is done. Leave the station clean and organized. If everybody does that, every team will receive an organized station and will be able to start working on time. The lab instructor is responsible for safeguarding many small equipment items so they don't get lost underneath the tables or behind the computers. It is essential to exercise caution when using the equipment and avoid letting it fall or jump out of your station. Be careful so it does not break. If anything has been broken or damaged during the lab period, please notify the lab instructor so that it can be repaired or replaced before the next lab group arrives.

This course adheres to all major university policies, including those related to the Americans with Disabilities Act, Student Behavior, Copyright and Fair Use, and Academic Dishonesty. You can read about them in the PowerPoint provided below. The rules of this course are designed to include all types of accommodations that CASS requests. However, suppose you feel that your accommodation is not considered. In that case, you can come to my office and discuss the matter before it becomes an issue.