

The University of Texas at Tyler
Syllabus
Spring 2024
Physics 2125 Section 2

Instructor: Dr. Randy Back

Classroom: RBN 4034

Class Time: Wednesday 1-4

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Office: RBN 4047

Phone: (903) 565-5797

Office Hours: MWF 10-11 and 12:10-1 or by appointment. You should feel free to stop by my office any time. If I am available, I will be happy to help you.

Course Topics: This course is designed to give students hands on experience that will complement the principles and concepts covered in lecture. Major topics covered will include Kinematics, Forces, Energy, Momentum and Rotational motion

Text: No Textbook required

Co-requisite: PHYS 2325

Labs: We will do a lab each week. The labs will be on Canvas. The lab report will be due before the next lab. You will turn the labs in on Canvas. If you are late to lab you will have to complete the lab on your own, time permitting.

Make-up: No late work will be accepted. If you have an excused absence you must make up the work before the due date.

Grading: Each lab report will be worth a maximum of 30 points. At the end of the semester there will be a lab project due. More details on the project will be provided in class. The project will be worth a total of 60 points. At the end of the semester all of your points will be totaled and divided by the maximum possible. A(90%-100%), B(80%-89%), C(70%-79%), D(60%-69%), F(<60%).

A complete description of university policies and procedures is listed on the canvas page for this course

The Census day is September 9

Last Day to withdraw from a course is November 4

Course Objectives/Student Learning Outcomes

1. Critical Thinking Skills (includes creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information)

The student will demonstrate their critical thinking skills by analyzing collected data and comparing their calculations to theoretical predictions. This Student Learning Outcome (SLO) will be assessed on the analysis part of their lab reports.

2. Communication Skills (includes effective development, interpretation and expression of ideas through written, oral and visual communication)

THIS STATEMENT MEANS TO PROVE YOUR WORK FROM START TO FINISH MAKING SENSE MATHEMATICALLY. (NO SKIPPING STEPS). YOUR WORK MUST BE THOROUGH AND IT MUST BE NEATLY WRITTEN.

The student will communicate an understanding of the physics principles discussed in class on free response essay questions. The questions will require the student to express a qualitative understanding through written communication of the physics concepts covered in class. This SLO will be assessed on the question section of their lab report.

3. Empirical and Quantitative Skills (includes the manipulation and analysis of numerical data or observable facts and results in informed conclusions)

The student will demonstrate the ability to collect empirical data on a physical system. This SLO will be assessed on the data section of their lab report.

4. Teamwork (includes the ability to consider different points of view and to work effectively with others to support a shared purpose or goal). This will be assessed by the instructor, based on the students' participation in the group. **If the student is late and/or not actively engaged in the experiment points will be deducted from the lab grade.**

Lab 1- Sept. 4 Measurement and Error
Lab 2- Sept. 11 Motion
Lab 3- Sept. 18 Runaway Cart
Lab 4- Sept. 25 Vector Decomposition
Lab 5- Oct. 2 Friction
Lab 6- Oct. 9 Force Tutorial
Lab 7- Oct. 16 Equilibrium
Lab 8- Oct. 23 Work and Energy Tutorial
Lab 9- Oct. 30 Conservation of Energy
Lab 10- Nov. 6 Conservation of Momentum
Lab 11- Nov. 13 Static Equilibrium
Lab Project Nov. 20
Make-up Lab Dec. 4