Homework Policy

PHYS 1308: General Physics II

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This course will test your ability to not only get the correct answer to a problem but also to demonstrate that you can correctly solve a problem. The following policy provides the strict guidelines covering any written material which you submit to the instructor for grading (e.g. written solutions to homework used as a quiz problem, or any solutions written up for an in-class quiz).

As in the humanities, communication in science relies on clear, well-defined standards that enable the free flow of information between parties. My standards are designed with that free but structured flow of information in mind. If you have concerns about any of the below requirements, please discuss them with me during an office hour or by appointment.

Format

All written material submitted for grading must contain the following or will receive an automatic ZERO GRADE. Homework should be submitted on standard 8.5" x 11" paper with proper margins (1" top, bottom and sides).

- **Your full name**
- **The name of the current assignment** (e.g. Homework 1, Quiz 5, etc.)
- **The date on which the assignment is due**
- **The title of each problem requested for submission** (e.g. Ch21-Q2 or Ch22-P3) above the work associated with that problem.
- **No more than 4 solutions per page**

All written material must have the following qualities, or will receive an automatic ZERO GRADE:

- **Writing must be legible.** If the instructor/grader cannot read your work to determine your method or approach, no partial credit can be assigned. completely illegible assignment receives an automatic zero (small print, messy handwriting, etc.). You are always free to type your assignment in using Word or a similar program.
- **Writing must be coherent.** Any written answered must be provided with a clear sentence structure: subject, verb, and object. Writing must adhere to the guidelines of good English prose. Mathematical solutions must also be coherent. The equations

should flow like sentences, one building on the next with a clear path from your original equations to your final solutions. Show as many steps in your work as you can. If you provide insufficient steps to demonstrate you knew how to solve a problem, we cannot give you full credit. Answers without explanations will almost always receive low/no credit.

Solutions and Answers

The formatting of good solutions is described further below, and you can use the solutions I provide after each assignment as an example. In addition to legible and coherent solutions, the answers to solutions must have the following qualities in order to receive full credit:

- **Start with a Fundamental Equation or Principle:** You must begin your calculations with a fundamental equation or principle from your textbook or class. Derive your solution from there showing all essential steps. Any solution that does not start with a fundamental equation or principle and does not show enough work will result in loss of credit, even if the final boxed answer is correct.
- **Answers must be boxed:** The final numerical or written answer to a problem must have a clear box drawn around it. This indicates your commitment to your solution and makes it clear to the grader what you intended as your final result. Failure to box your answer, even if it is correct, will result in a loss of credit.
- **Numerical answers must have the correct units:** The importance of units cannot over over-emphasized. Satellites have crashed on Mars because somebody messed up units! Failure to put the correct units, or any units at all, next to your numerical answer will result in a loss of credit.
- **Numerical answers must have the correct significant figures:** Numbers have limitations; no number derived from measurement can be known perfectly. Applying the rules of significant figures teaches you this limitation. Failure to apply these rules correctly will result in a loss of credit.

Academic Honesty

You are encouraged to work together to solve problems on the homework (NOT EXAMS). However, you must also follow the basic guidelines of academic ethics.
Please see the bullets below for some basic guidance on this, as well as for some positive ways you can adhere to these guidelines.

- **Written solutions to problems must be your own work, and not copied from anybody else.** While you are encouraged to collaborated to solve problems and learn from one another, copying each others' work WILL NOT BE TOLERATED. This includes copying solutions from a solution manual, the internet or any other such resource. Any evidence of such behavior will result in proceedings in accord with the University Honor Code.

- **Numerical answers must be arrived at by your own work.** If evidence is obtained that suggests students in the class are sharing answers, steps will be taken in accord with the University Honor Code. Sharing of answers and failure to pursue your own solution, even based of collaboration on a problem, WILL NOT BE TOLERATED. If you work together, please follow these simple guidelines to acknowledge your positive collaboration with your peers.
- **Write the names of your collaborators at the top of your submitted work.** Acknowledging collaboration is like citing sources in a research paper; it gives credit to those who help you and whom you help, while asserting that the work submitted it still a product of your effort.
- **Work out the problems independently.** If you have arrived a solution as a group, separate from one another and each work the problem independently to see that each member of the group can follow the approach and agrees that this is the correct solution. This will also result in independent write-ups of the solution to a given problem.

Advice for Writing Good Solutions

Writing solutions is like writing an essay - you have to convince the reader that you have understood the question, applied the correct assumptions, and then demonstrate your solution with sufficient detail to defend the answer. Here, I outline some recommendations for writing high-quality solutions. Applying these guidelines will help you to focus your problem solving and communicate your understanding effectively.

1. State and Justify Your Assumptions
   - clearly state your assumptions and justify why you have chosen them. This will help your audience determine whether you have understood the question(s) being asked.

2. Show Sufficient Work To Convince Your Audience You Understand the Process
   - show enough intermediate steps that your audience is convinced you not only understand the question, you understand how to answer the question. This includes showing how you apply your assumptions, highlighting any mathematical or physical tricks needed to simplify steps in the solution, and finally clearly showing the answer. In science, **the process** is the most important means by which you demonstrate the correctness of the answer. Showing your work clearly is the most important way to show that you understood the material.

3. Comment on the Answer
   - If you are not asked to comment on the answer, but you have observed something interesting about the solution, please make a comment. This helps demonstrate that you not only understand the question but identify meaning in the answer.