

# Modern Physics (PHY 3305) Lecture Notes

## HomeworkPolicy

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### PHY 3305 Homework Policy

no tags

The policy regarding the homework for PHY 3305 is strict, and is meant to enforce fair standards and high quality. 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.

All homework handed in by students must:

- *Be Printed on 8.5" x 11" Paper*
  - Homework will be scanned in and graded in a digital format. It is important that the format of the homework be uniform. You are required to hand in homework that is printed on 8.5" x 11" paper. Plain, ruled, or colorized paper are all acceptable, as long as the size is correct. You may use both sides of the paper. Homework handed in on other sizes of paper will earn a score of 0.
- *Contain the Student's Name, Date Assigned, and Page Numbers:*
  - Homework must contain the student's FULL name (first and last), the date on which it was assigned, and page numbers so that the order of pages in the assignment can be determined at any time. Name, Date, and Page Number must appear on each side of each piece of paper handed in. Failure to provide any of these three pieces of information will result in a grade of 0 being assigned to the homework.
- *Contain the Title or Number of the Problem:*
  - For each problem handed in the student must list the title of the problem. This will correspond either to the problem number in the textbook (Chapter number and problem number, e.g. *CH2-2*) or to the number given on the homework assignment sheet (e.g. *SS-2*). Since problems can come from sources other than the textbook, those not in the textbook will have their own numbering. Failure to list this information will result in score of zero being assigned to

the homework.

- *Be Legible*
  - The writing on the homework must be clear and legible, including any sentences written as explanation of the answer or as part of the answer and any mathematical equations submitted in the answer. Writing legibly also includes using clear English in your responses. Help is available through the University if you feel you need assistance in improving the presentation of your work. Failure to write legibly will result in a score of 0 being assigned to the problem containing the illegible text.
- *Be Well Organized*
  - Solutions to problems must be organized in the order in which the problems were assigned. In addition, solutions to no more than two problems may appear on one side of a sheet of paper. Failure to meet either of these two criteria will result in a score of 0 being assigned to the entire assignment. Skipping problems is OK (but will result in loss of all credit on that problem), as long as the order of the other problems is as assigned.
- *Show all Work*
  - The student must show ALL WORK leading up to a result. Failure to provide a sufficient number of steps makes it impossible for the grader to determine whether the student has understood and answered the question. Failure to provide sufficient work will result in points being deducted from the score allotted to each problem.
- *Box the Mathematical Answer*
  - The final mathematical answer to a problem, or to each part of a problem, must be enclosed in a box to distinguish it from the work leading up to the result. If the answer is an equation, the entire equation (not just one side of it) must be boxed to get credit. It is important for the student to be confident in their final answer, and for the grader to know that this was what the student intended to be graded. Failure to enclose final mathematical answers to each problem, or each part of a problem, will result in no credit being given for having arrived at the answer (credit will be given for work leading up to the answer). The amount of credit will vary from problem to problem.
- *Use significant figures*
  - Answers with an arbitrary number of decimal places will not be accepted. Answers are expected to conform to the rules of *significant figures*. A copy of these rules is available on the web: <http://www.physics.smu.edu/sekula/phy3305/sigfigs.pdf>. Failure to apply the rules of significant figures when presenting the answer to a problem will result in no credit being given for having arrived at the answer (credit will be given for work leading up to the answer).

- The amount of credit will vary from problem to problem.
- *Be the Unique Work of the Student*
    - Plagiarism will not be tolerated. Any evidence of plagiarism or answer sharing will result in a score of 0 being assigned to the homework. In addition, further action in accord with University policy may be taken. Working together to solve problems is encouraged and is a healthy part of the scientific process. However, the homework handed in by each student must represent a unique work of their own personal effort.
  - *Be on Time*
    - Failure to hand in homework by 3:30 p.m. on the due date will result in a score of 0 being assigned for that entire assignment. University policy regarding notification of a delay in handing in assignments applies to this rule, so any late homework must be explained in accordance with University policy in order to be excused.

## **Guidelines on 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 have done the process correctly.
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.

### **Policy on Challenges to Grading**

You are free to challenge the grade you have received on a problem or on an assignment. These challenges must be presented in writing so that they can be discussed during an office hour. Reasonable arguments will be heard. Arguing about the score on a problem will not result, *under any circumstances*, in the lowering of the score (e.g. should further problems be identified in the solution during the discussion). You only stand to maintain or to gain points if you present a reasonable argument, so if you feel that you have earned more points than have been awarded there is no harm in challenging the grade.