

Roles and Grading

The lab grade makes up part of your total Physics 121 course grade. This grade will be based on your team's lab write-ups, your individual contributions to the lab write-ups, and your individual participation in the class.

Roles

You will normally be working in groups of *four*. All four of you should contribute equally to planning and carrying out the experiment. There are many possible ways to do each experiment, and we are looking for a lively exchange of ideas and a cooperative spirit. You do, however, have specific assigned roles when it comes to keeping records and writing up the lab report. The division of labor will be as follows:

1. *The Journalist*: This person is responsible for taking notes of everything that happens during the experiment, and writing up the “Journal” section of the lab report.
2. *The Data Interpreter*: This person deals with tabulating and displaying the data, operating the computer, and writing the “Data and Interpretation” section of the report.
3. *The Critic*: This person is responsible for taking notes during class presentations and discussions, and for writing the “Evaluation” section of the lab report.
4. *The Checker*: This person is responsible for checking all sections of the lab report and suggesting ways to improve it before it is turned in, using (for instance) the comments made by the grader on past lab reports.

The Critic and Checker will also probably do most of the hands-on work with the equipment for the experiment since the Journalist and Data Interpreter will often be busy with record-keeping. When there are group presentations, the Journalist and Data Interpreter should present and answer questions on behalf of the group.

Not every group works smoothly together at all times. Part of your task is to find ways to cooperate to cover difficulties. For example, if one person is having trouble with their particular task in a given week, the Checker should serve as a support person and collaborator to help out.

You must work in a group of 4 or 3. If there are only 3 in your group, share the role of Checker. If a team member is absent for one week of a two-week lab, the Checker should step into that person's role. Groups of 2 or 5 are not permitted. You must rotate roles every experiment so that each person gets a chance to do all the roles approximately equally.

Participation

Your TA will be monitoring your contributions to designing and carrying out your group's experiment and to preparing and/or giving your group's presentation, and will also be looking for constructive participation in class discussions. This will make up part of your individual grade. We would love to see you make significant contributions to other groups' understanding of their lab work.

Lab Write-ups

At the end of the experiment, your team will hand in a complete lab write-up — a persuasive log of what you have done in lab, showing how you did the experiment thoughtfully, and presenting your findings. The write-up must include three components:

- ***A Journal:*** Discuss your goal(s), what you did, how you designed your experiment, and what results you got, written so that an absent student could understand and repeat your experiment. If you followed false trails that you gave up you should explain them here with your reasons for giving them up.
- ***Data and Interpretation:*** Present your data, in a form easy for an absent student to understand. Discuss what your data means, conclusions you've drawn, and make a persuasive *case* to convince your reader that your conclusion is valid.
- ***Evaluation:*** After you've finished interpreting your data and have had a chance to see what other groups did for the experiment, go back and reconsider what you've done. Make comparisons and discuss how you could improve on your experiment in light of what you learned during lab and the class presentations.

Those components are to be written by the Journalist, Data Interpreter, and Critic, respectively. All of them should be reviewed by the Checker to improve them along with the primary writers.

Writing the Evaluation can be hard! That's why we have the class discussion – to help you think about your experiment again and write a deeper evaluation of what you did. Ask yourself: If I got to re-do this experiment next week, how would I do it differently?

Scoring

You'll receive a group score based on your group's lab write-up (shared by everyone in your group) plus an individual score that is specific to you. Each category will be scored on a scale from 1 to 5, with 1=poor, 2=fair, 3=good, 4=very good, 5=excellent. Two-week labs will have twice as much weight as one-week labs when calculating your course grade.

Group Score
• <u>Design and thoughtfulness.</u> Did your team do a creative and thoughtful job in designing your experiment, and was this thought reflected in the write-up?
• <u>Journal section.</u> Is it complete and clear? Did your team explain your experiment so that someone could reproduce it?
• <u>Data and Interpretation section.</u> What conclusions did your team draw from your data, and were you able to back up these conclusions with this data, in a convincing way?
• <u>Evaluation section.</u> After observing the experiments of other groups, were you able to critique your own lab, propose constructive changes, or explain why your experiment was better than those of your classmates?

Note: your grade will not depend on whether or not your numerical results agree with some accepted standard but on how well you conceived and carried out the experiment.

Individual Score
• <u>Your part of the lab write-up.</u> This is the score for the specific part of the write-up that you wrote: the Journal section for the Journalist, etc. If you were the Checker, you get the average score for the three sections (that you checked and hopefully helped to improve).
• <u>Class participation.</u> Did you actively participate in your group's experiment? Did you help prepare and/or deliver your group's presentation? During the presentations and discussion time, did you ask good questions or contribute ideas that helped your classmates understand or evaluate their labs better?

Attendance

If you miss or have missed a lab, contact your TA *and* your lecturer immediately. If you have a VALID WRITTEN EXCUSE, you will be allowed to do a makeup activity that will take at least two hours and may involve doing another lab or evaluating one. You can only make up *one* missed week in this way. If you do not have a university-recognized valid excuse, you will simply get a zero for the week you missed.