

Your Name
CID
Section #
Your TA's Name

Your Title

The papers for Physics 108 are a requirement to receive an A in the class. The TA's will grade them on a pass/fail basis as stated in the syllabus. The first paper must be turned in at the beginning of lab 6 and the second is due at the beginning of lab 11. Like most papers in college they should have correct grammar, spelling, and punctuation. That said, we tend to care more about correct physics than fancy writing and will grade accordingly.

As many students tend to be confused about the requirements of these papers I will briefly describe the basic format that we are looking for. As seen in this document, we only need your name, CID number, section number, and the name of your TA listed in the header. The rest of the paper should be double-spaced and in a 10- or 12-point font similar to Times New Roman. The papers should be a minimum of one and one half pages and a maximum of two and one half pages. Papers with some structure are much easier to understand so we expect to see an introduction, main body, and a conclusion.

In your paper you should discuss the physical principles that you've learned about and studied in one of labs 1-6 for the first paper and one of labs 7-11 in the second paper. The paper should describe an application of the principles. The application will typically come from your personal experience, something you have observed, or something you may be interested in. It should not just be an expansion of the conclusion section from one of your labs. We want you to see how physics principles can be observed in many everyday situations and experiences.

You usually don't need any other sources besides your textbook and the lab manual to write these papers. If you do include information from other sources be sure to cite them at the end of the paper. If you include a *small* quote from the other sources, be sure

that you indicate that it is a direct quote and where it came from. Most of the formulas used in the labs have names that you should refer to so don't worry about typing formulas into your paper. Feel free, however, to include rough estimates of quantities that you are discussing that will help explain your ideas such as distances traveled, forces applied, etc.

Please do not copy homework problems or examples from your textbook to write your report. We've already done most of the homework for Physics 106 and don't feel that copying them shows much understanding of the subject. Please do not repeat over and over again the definitions of the laws that you are describing.

These papers are meant to help you learn and you should approach them that way. The papers are also a check to make sure that you are really understanding the labs and not just copying your lab partners' answers. If you have been working hard to understand the labs then the papers should be quite simple and take no more than an hour or two of your time. Just review the relevant sections of the textbook and lab manual, describe your example or application and how those principles are illustrated by that application, and you will do great.

Some ideas for topics for the first paper

- Electric charge
 - Electrostatic shielding
 - Lightning (charge separation and electric fields in thunderstorms)
- Electrical circuits
 - Household wiring
 - Any kind of electrical circuit
- Magnets and magnetic fields
 - Design of refrigerator magnets (this is actually quite interesting)
 - Magnetic fields in the earth or the sun
- Electric and magnetic forces
 - Computer or TV Cathode Ray Tubes (the old style versions, not LCD)
 - The earth's magnetosphere (protection from charged particles from the sun)
- Induction
 - Transformers
 - Generators

Some ideas for topics for the second paper

- The eye
 - Eyeglasses
 - Contact lenses
 - Contact lenses and astigmatism
- Common optical instruments
 - Any optical instrument (telescope, binoculars, microscope, etc.)
- Light, color, etc.
 - How we perceive color
 - Colorful things around us and how they originate (rainbows, sundogs, blue sky, brown haze, apples, tree leaves, etc.)
- Carbon or other radioactive dating
- Beneficial uses of radioactivity
 - Carbon or other radioactive dating techniques
 - Cancer treatments
 - Structural analysis (e.g., using cobalt-60 to “x-ray” materials to look for defects)