Please write a research paper on a physics-related topic that interests you and forms some part of your everyday life. You should research the physics behind your topic, and describe your findings at a level comparable to a newspaper column or magazine article.

You may choose from the following list of topics. If you would like to write about a topic not listed, please speak to your T.A. before Oct. 25 to gain approval.

1. Skating; How Objects Slide on Ice
2. Physics of Photography; Cameras
3. Playground Physics; Swings, Merry-go-rounds, Slides
4. Automobiles; Physics of Driving
5. Automobiles; Hybrid Vehicles
6. Bicycles; Stability, Gears
7. Water Distribution; Reservoirs, Water Towers, Household Water Pressure
8. Airplanes; How We Fly
9. Interior Lighting; Fluorescent, Incandescent, Discharge Lamps, LEDs
10. Air Conditioners and Refrigeration
11. Musical Instruments; How Sound is Produced
12. Musical Recording; How Sound is Received and Stored
13. Magnetism; Earth’s Magnetic Field, Permanent Magnets and Electromagnets
14. Electric Generators and Electric Motors
15. Microwave Ovens
16. Radio; Transmission and Reception
17. The Sun and Life on Earth; Solar Power
18. Lasers; How They Work, How They Are Used.
19. Energy Production in Ontario; Hydroelectricity, Nuclear
20. Medical Imaging and Radiation
21. Ocean Tides and Currents
22. Physics of Golf (or other sport – to be approved by TA)
23. Air; Atmosphere, Pressure
24. The Greenhouse Effect and Global Warming
25. Thunderstorms; The Physics of Lightning
26. The Physics of Rainbows and Why is the Sky Blue?
27. Television; Cathode Ray Tubes, Plasma Screens and LCDs
28. Optics and the Physics of Corrective Lenses

The word-count of the main body of the paper (not including references) should be between 1500 and 2000 words. The word count can be calculated with your word-processing software, such as Microsoft Word, and it will be calculated automatically if you submit to turnitin.com. If your word count is outside the range 1300 to 2200, you will be penalized for length at the rate of 5% of the mark per 200 words outside this range. The total number of pages (including references, figures, cover sheet (not required), etc) should be between 4 and 8. If the number of pages you turn in is greater than 9, you will be penalized at the rate of 5% per page. You may include figures or diagrams which you create.
yourself, or you may use figures or diagrams from another source as long as the source is referenced and the original artists or authors are acknowledged.

You must reference any articles, books or web-sites you’ve used as sources; these should be cited in the paper near the fact or ideas that came from the source, then listed in full in the “References” section at the end. Please see the Academic Guidelines on how to properly reference sources at your college Writing Centre or on the web (http://www.utoronto.ca/writing/plagsep.html). The number of sources in your list of references should be at least 3 or 4. Each time you refer to something gleaned from a reference, a number should appear in your in the body of your paper which refers to the number of a reference listed in your reference section.

You must let your TA know what topic you have chosen by 7:30 PM on Wednesday, October 25. Your final paper must match with the topic you chose. Approval and recording of this topic on time is worth 5% of your total mark on the Term Paper. If the topic is chosen late, you will not receive this 5%.

Your paper, including figures and tables, should be submitted both in electronic in format, to www.turnitin.com, and in paper format to Professor Harlow. The paper version and electronic versions must be exactly the same (including figures, tables, annotations, etc). If there is a difference, only the electronic version will be marked. The due date for the electronic version is Thursday, November 23 at 11:59 PM. The paper version must be turned in to Professor Harlow in MP251 by Friday, November 24 at 12:00 noon at the latest. The late penalty is 10% reduction in mark per day of lateness. Many electronic formats are acceptable, including Word, Wordperfect, Postscript, PDF and HTML. The marker will have access to an “originality report”, which is a comparison of the text-portion of your report to millions of other documents, including all reports previously submitted to Turnitin.com, and many documents which were available at some time on the world-wide-web. The originality report is meant to deter plagiarism. It will not be used in the marking unless there is some evidence that an unusually large amount of your unquoted text is identical to some other source. If you do wish to quote a source, be careful to reference it and include the copied words in quotation marks, so it is clear to the marker that you did not write them.

To submit your assignment you should follow these steps:

1. **Set up a user profile (If you already have a user profile, go to steps 2 and 3)**
   - Visit www.turnitin.com and click Create a user profile.
   - Follow the on-screen directions.
   - For PHY205 the Turnitin class I.D. is 1532314. and the Turnitin class enrollment password is everyday.
   - You will need to enter a valid email address, password and your name. Please enter the same name that is on your University of Toronto I.D. so we can easily tell who you are.

2. **Logging in (skip this step if you just finished creating a user profile)**
   - To login visit www.turnitin.com and enter your email address and password in the space provided in the top right hand corner of the web site.
   - Click the Log in button to enter your personal Turnitin homepage.

3. **Enrolling in a class (skip this step if you just finished creating a user profile, and are therefore already enrolled in PHY205 on turnitin.com)**
   - From your homepage click the Enroll in a class button.
   - For PHY205 the Turnitin class I.D. is 1532314. and the Turnitin class enrollment password is everyday.
• Click Submit to enroll in the class and add it to your homepage. Each class that you have enrolled in will appear on your homepage. Click on “Physics of Everyday Life : master” and you will see the one assignment for this course: Term Paper.

4. Submitting a paper.
• From your Turnitin homepage select “Physics of Everyday Life : master”
• Click on the Submit button and select File Upload from the pulldown menu.
• Enter a submission title for your paper. Use the Browse button to select the file that you would like to submit. Click Submit.
• You will be asked to confirm your selection. Click Yes, submit to finalize your submission.
• Once you have submitted your paper you will receive a digital receipt.
• Submitted papers will appear in your class portfolio next to the relevant assignment.

If you prefer, you may choose to submit only a hard-copy of your term paper, but in this case you must provide a more detailed bibliography, explicitly describing sources for each table, figure and sub-section in your report. Please speak with Professor Harlow at least one week before the report deadline if you prefer to submit a hard-copy only.