

Directions: Using your book, your various professors, the internet, or other resources, research a particular application of linear algebra to your own field of study. I want you to find a way that people use or have used linear algebra to solve problems in their field. But I want the application you choose to be one relevant to your interests. So, if you're an engineer, find a problem in engineering that can be solved using linear algebra. If you're a chemist, find an application to chemistry. *I know what your majors are so don't try to fool me.* If you have trouble finding a topic, feel free to come see me. You will write a small report on your findings. Your report must consist of the following items.

- Legibility
 - Preferably, I'd like you to type your report so I can read it easily. Typing math is not always easy, so for your math portion of your report, you are free to write instead. No matter what, it needs to be neat and legible.
- 2-3 pages in length.
 - Truthfully, the length isn't that important to me, but I want it to be something more than a quick paragraph. I want your report to be thoughtful and hopefully something you learned from.
- Your paper should be formatted in the following way.
 - **Section 1:** For this part you are to introduce the reader to your subject. Chances are, I am not familiar with the particulars of the problem you are using linear algebra to solve. So if your application is in Physics, spend some time going over the details of the problem to the layman. Make sure all ideas are clearly spelled out. Properly define any technical jargon and notation. Explain the problem in plain English. Don't assume I know what you're talking about. Chances are, I don't. Basically, use this section to provide the reader with sufficient background information so the reader can understand what you are talking about.
 - **Section 2:** Introduce the linear algebra concepts and machinery that you will be using to solve your problem. Properly define any relevant material and begin solving your problem. The bulk of the work will be done in section 2.
 - **Section 3:** Conclusions. Discuss what findings you have come to in relation to the problem you were attempting to solve. Then discuss how using linear algebra benefited you in this process. What did you learn? Be thoughtful and share your insights.
- To receive an A on this paper, your application should be more than just solving a system. I would like something more profound than this if possible. There are many applications of the determinant, linear transformations, and eigenvectors, for example. Use the opening flap of your book to find numerous references to applications throughout the text. If you are a math major, come see me for some cool ideas.

Good luck and come see me any time for assistance.