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## Linear Systems Course Project

In this course, you are being asked to complete one course project. This handout details the information you need to complete the project successfully.

**Project Timeline:** The project will be completed in stages, and the following schedule details when these stages must be completed. **Team Selection and Abstract Submission:** Friday, February 16. **Project Proposal:** Friday, March 23. **Progress Check:** between Monday, April 9 and Friday, April 13. **Project Presentations:** Monday April 30 and Wednesday May 3.

**Project Teams and Abstracts:** The project will be done in teams of two (or possibly three, with increased expectations placed on larger teams). You are allowed to choose your own partner(s) for the project. If you have difficulty finding a partner, please let me know before the Team Selection date. On Friday, February 16, turn in a type written sheet with your team members listed on it, a possible title for your project and a short abstract of the project topic. **The title and project can change!** However, I want you to be thinking about what area you might be interested in and explaining your early ideas.

**Project Proposal:** Goals of the project include furthering your understanding of linear algebra in a manner specifically tailored to your interests as well as to advance your technical writing and communication skills. The project proposal is the first step in this process. The project proposal should be no less than one page typed and double spaced. It should outline your project idea as well as how you intend to complete the project (i.e. what steps will be necessary). Finally, it should summarize what you envision the final project presentation will consist of. This proposal needs to be handed in no later than Friday, March 24.

**Project Topics:** Ideas for a project may include: investigating a scientific model of your own design, or from a published research paper or text, furthering the analysis of an idea we have discussed in class, completing a lengthy problem of your own choosing, designing a general module on a topic related to linear algebra, etc. You want to come up with an idea that is related to your interests (mathematical or otherwise)—the more interesting you find your topic, the easier it will be to complete the project successfully. Feel free to consult with me regarding your project ideas. The textbook is an excellent source of Project Ideas. In each Chapter there are multiple “Explorations” and “Vignettes” which discuss applications of related concepts to those mentioned in that chapter to real world situations.

**Progress Check:** Between Monday, April 9 and Friday, April 13 each project team should meet with the professor to let me know how the project is going. The meeting does not need to be long and can be during office hours. I want to see what work you have started and to give you feedback on your progress on the project so far.

**Project Submission:** The final project will be completed in two ways. There will be a written component as well as an oral component. The written component should consist of a formal write-up of the work you have done. The project aim should be clearly stated and explained; the mathematical work should be detailed sufficiently to allow the reader to follow but not overly so; the conclusions and evaluations of the project should be discussed. The length of these write-ups will vary between projects. However it is assumed that each team will need a minimum of 5 pages to explain the projects sufficiently. References and figures should be included. The oral presentation will consist of a ten minute presentation (groups of three have fifteen minutes), in class. The use of computing technology, Powerpoint and/or other visual aids is encouraged.