

1 Project Statement

The goal is to learn more about how linear algebra is used in your field of study or personal interests. You will research an application of linear algebra, write a literature review on the topic, a research proposal, and create your own project collateral.

2 Plagiarism

You are expected to submit your own work for this project. If you make use of an idea from another source you are expected to provide a citation. If you copy the words from another source you are expected to put them in quotes and provide a citation. If you make use of a figure or diagram from another source you are expected to provide a citation. To do otherwise is plagiarism.

Any submission found to plagiarize another work will receive a zero.

You can and are expected to consult written sources or sources on the web. You are expected to consult with the faculty and staff at the writing center, but that should be limited to the structure of your submission and the writing found in your paper.

3 General Guidelines

General guidelines for the report can be found below. More specific guidelines are given in the next sections.

- You must submit your own work as a pdf or Word document on eLC. The report should include a cover page with your name. The cover page should have the following statement:

This report is my own work. Any help, insight, or aid that we have received is explicitly acknowledged. To do otherwise is plagiarism, and I understand that I will receive a zero on this report if it is found that I did not adequately acknowledge the contribution of anybody else.

- Your paper should be divided into different sections (including an introduction and a conclusions section). Your introduction should provide an overview of the report. The introduction should be written for someone who is not familiar with the project or the topic. You should assume that the reader has a basic understanding of linear algebra.
- Equations should be written using either an equation editor or hand written on the page. An expression can be written within the text, but an equation should be put on a separate line. (Typing out something like " $\sqrt{x^2+y^2}$ " is bad.)
- All images and tables should be labeled and include a caption. All plots should have a title and proper annotations. All axes should be labeled and units should be included. Be a responsible person and do not do something like this: <https://twitter.com/MarekGierlinski/status/1246433996612997122>.
- Every image and table should be discussed and described in the text. The reader should be able to figure out what is in an image or table based on your description of it. We should not have to guess what you think is important or relevant in a graph.
- You should include proper citations including acknowledgments for any person who helped you. At a minimum you should cite at least one text book, two scholarly articles, and possibly your instructor.
- Your report should also include references associated with each citation.

4 The Assignment

Choose one topic in the blog post *Here's just a fraction of what you can do with linear algebra*. If you would like to choose a topic not listed in the blog post, it must be approved by Dr. Alli first.

Define and describe the topic and how it can be used in your field of study or in a project that you are interested. This will be the introduction of your project. (2-4 paragraphs)

Write a literature review on the topic and its application in your field using the following steps outlined from Scribbr. Your literature review should demonstrate your familiarity with the topic and scholarly context, develop a methodology for your research, and position yourself in relation to other researchers. (2-3 pages)

1. Search for relevant literature on Google Scholar, JSTOR, or other research journals and textbooks.
2. Take notes on the sources found then evaluate and select the sources that will be used in your project.
3. Identify themes, debates, and gaps so that your literature review has an organized structure. You'll want to find trends, themes, and contradictions to inform how you write your review.
4. Outline your literature review's structure. You may choose to structure your literature review chronologically, thematically, or methodologically.
5. Write your literature review. Give an overview of the main points of each source and combine them into a coherent review. Add your own interpretations where possible, discussing the significance of findings in relation to the literature as a whole. Mention the strengths and weaknesses of your sources. Use transitions and topic sentences to draw connections, comparisons and contrasts. In conclusion, you should summarize the key findings you have taken from the literature and emphasize their significance.

Write a proposal for a research project that could be worked on by you and a professor of your choice. This section of your project should include the following:

1. The title of your proposed research project, the professor you would work with, and the department your professor works in
2. The background and issues of your proposed research
3. Your research question
4. Your research methodology (resources to be drawn on, the research approach, the research methods appropriate for the proposed research, a list of relevant topics covered in Math 3300 that could be helpful in the project)
5. A realistic plan of work and time schedule

Finally, you should conclude your assignment with a bibliography in a style used by your field.

4.1 Bonus

Create your own project collateral related to the topic chosen for this project. You may code something, write a biography of the person who developed (or was a pioneer of) your topic, or draw a comic about the discovery or advancement of your topic.

Project Rubric
Math 3300, Spring 2020
Due: Wednesday, May 6, 2020 by 11:59pm

A submission for the first project is expected to complete the following tasks:

- _____ - 5 Title Page
 - 1. Is the date, class information, student's name, section, and instructor clearly stated including the statement on plagiarism? (4 points)
 - 2. Is this a separate page with no other information? (1 points)
- _____ - 15 Transitions, Grammar, and Style
 - 1. Does the narrative flow smoothly? Are there abrupt changes from one topic to another? Are sections clearly labeled? (5 points)
 - 2. Is the grammar and punctuation in the paper correct? (5 points)
 - 3. Are the words spelled correctly? (5 points)
- _____ - 10 Introduction
 - 1. Does the introduction state and define the topic chosen?
 - 2. Does the introduction include an explicit overview of the paper itself? Is an outline of the paper explicitly stated?
- _____ - 30 Literature Review
 - 1. Are at least 3 sources used?
 - 2. Does the literature review have an organized structure?
 - 3. Does the literature review include your own interpretations?
 - 4. Does the literature review provide an analysis of the sources used?
 - 5. Does the literature review include a summarization of the key findings and emphasize their significance?
- _____ - 30 Research Project Proposal
 - 1. Does the proposal include a project title, professor, and department?
 - 2. Does the proposal include relevant background and purpose for the research?
 - 3. Does the proposal include a research methodology?
 - 4. Does the proposal include a realistic plan of work and time schedule?
- _____ - 5 Conclusion
 - 1. Is an overview of the project provided?
 - 2. Is the research project proposal stated again?
 - 3. Are any ideas offered as to any potential questions raised by the findings?
- _____ - 5 Bibliography
 - 1. Does the paper include a references page?
 - 2. Does the paper reference every article and outside used in the project?
- _____ - 5 Bonus
 - 1. Is original code, historical biography, or a relevant comic included in the paper?