Deadline: Friday August 30 at 10:00 PM

Short Essay 1

This is the first of four short essays that will help you prepare for your project in this class. It has two main aims:

- To help you practice producing mathematical documents using the LaTeX typesetting language.
- To inspire you to discover networks that interest you and what kinds of questions you might wish to investigate about them.

Prompt

Find a *scholarly source*, such as a published journal article, book, or preprint, that discusses a network that interests you. Any network is fine — social, biological, information, physical, etc. — but it must be described in a scholarly source ***other* than Newman's book**. Cite this source and address the following questions:

- Where did this network come from? How was the data for it collected? What is one way in which the data collection methodology could potentially have been flawed, relative to the intentions of the researchers who collected the data?
- What is the main question that the researchers asked about the network? What did they do to answer this question? Describe at least one of their analyses using some mathematical symbols and at least one display equation (i.e. a centered equation on its own line). It's fine to replicate symbols or equations from the source, with appropriate acknowledgment.
- What are two questions that *you* have that you feel would be interesting questions for future work?

Requirements

This short essay will be graded out of 2 points. An essay that meets the following requirements is very likely to receive full credit. An essay that is missing one or more of the requirements is very likely to not receive full credit. Partial credit is available on short essay assignments, but there are no resubmissions.

1. Your essay should include discussions of each of the questions above.
2. Your essay should be written in LaTeX.
3. Your essay should include multiple mathematical symbols and at least one display equation (like this one):

$$\mathbf{L} = \mathbf{D} - \mathbf{A} \tag{1}$$

4. Your essay should be no longer than 1,000 words.

5. Your essay should be organized into paragraphs, each of which discusses a separate and clearly indicated set of topics. A valid and "safe" way to organize your essay is to have one paragraph corresponding to each of the three bullet points.

6. Your essay should be written in clear, scholarly prose. Errors related to spelling and grammar are not an issue provided that your meaning is clear.

7. Your essay should include at least one **graphic with a caption** that is relevant to the network. This could be a graphic from the paper, an image that helps the reader interpret the meaning of nodes or edges, or any other relevant graphic. Your caption must be original. Make sure to briefly discuss this graphic in your written essay.

8. Your essay should be **on time**. Late submissions will lose 1 point per day.

Getting Started with LaTeX

Maybe you haven't written documents with LaTeX before. That's ok! The easiest way to get started is to make a free account at `https://www.overleaf.com`. Once you're there, make a new project using the "Example Project" template. Remove, modify, and add content as needed. All the features you'll need are already illustrated there. Here is a more comprehensive reference: `http://mirrors.rit.edu/CTAN/info/lshort/english/lshort.pdf`.