AMATH 482 Homework Guidelines

There will be 5 homework assignments throughout the quarter. Each of the homework assignments will be part of your final grade and are equally weighted. The homework assignments should be written as if they were an article/tutorial being prepared for publication. I expect a high level of professionalism on your reports. A pdf version of your report needs to be submitted through Canvas by the due date and time. No late assignments will be accepted. Additionally, you will be required to create a Github repository and upload all of your reports and code to Github. The assignments should NOT be made publicly available on Github until AFTER the due date. A date will be set by the instructor by which all assignments must be uploaded to Github. A Github tutorial will be available soon.

The following is the expected format for homework submissions in addition to porting the write-up to your GitHub:

MAXIMUM NUMBER OF PAGES: 6 (plus additional pages for attaching your code: Appendix B)

Title/author/abstract. Title, author, and short (100 words or less) abstract

Sec. I. Introduction and Overview

Sec. II. Theoretical Background

Sec. III. Algorithm Implementation and Development

Sec. IV. Computational Results

Sec. V. Summary and Conclusions

Appendix A. MATLAB functions used and brief implementation explanation

Appendix B. MATLAB codes

I will grade based upon how completely you solved the homework as well as neatness and little things like: did you label your graphs and include figure captions. The report for each homework assignment is worth 10 points. Five points will be given for the overall layout, correctness, and neatness of the report, and five additional points will be for specific things that the TA will look for in the report itself. We will not tell you these things ahead of time as a good and complete report should have them as part of the explanation of what you did. For example, in the first homework, the TA may look to see if you talked about the fact that you must rescale frequencies by 2*pi/L since the FFT assumes 2*pi periodic signals. This is a detail that is important, so it would be expected you would have it. If you do, you get the point. If not, then you miss a point. At the end of the quarter, we will check to see if your assignments have been uploaded to Github. 10 points will be awarded based on your Github (2 for each assignment) based on whether each assignment is there and on the organization of your Github repository.

NOTE 1: The report does not have to be long, but it does have to be complete.

NOTE 2: This report is not for me, it is for you! Specifically, for the future you. So write a nice report so that you could reproduce the results if you need the methods addressed here in another year or more.

A few things should be kept in mind when generating your reports:

1. Use a professional grade word processor (LaTeX or Microsoft Word, for example).
2. For equations: LaTeX already does a nice job, but in Word, use Microsoft Equation Editor.
3. Label your graphs. Include brief figure captions. Reference the figure in the text.
4. Figures should be set flush with the top or bottom of a page.
5. Label all equations.
6. Provide references where appropriate.
7. All coding should be shuffled to Appendix A and B. Reference it when necessary.
8. Always remember: this report is being written for YOU! So be clear and concise.
9. Spellcheck.

My advice to you is not to spend your time trying to guess which details we will be looking for when we grade your assignment. Instead, focus on writing a clear, professional report. Some data science employers want to see Github repositories with projects that you have completed. Create something that you would be proud for them to see.