Homework Format with Annotations from your TA:

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

* This might feel short but try to stick to it! Condensing your writing usually improves it. If you just have too many beautiful images to fit, or you really want to dive deep into a method you could consider adding an appendix C with supplementary information. Your paper should make sense to a reader who does not read appendix C though.

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

Sec. I. Introduction and Overview

* You can include some history and motivation for the topic of the homework--whatever is interesting to you. Discuss the main point of the report--take a second to reflect on what you are learning from this project and how it fits into a broader context.
* The “overview” refers to an overview of the content of your report in paragraph form, rather than a table of contents.

Sec. II. Theoretical Background

* Put in some math!
* Reference course notes, literature, text books, etc.

Sec. III. Algorithm Implementation and Development

* Explain the purpose and method of each section of your code in paragraph form. Use complete sentences, not large snippets of pseudocode or code.
* Explain any important, tricky, or unexpected details. Did you have to trim your data to get better results? Did you rescale anything? Upsample or downsample?
* Justify choices you made such as using certain settings, or a certain parameter. If you hand tuned a parameter, say that and what criteria you were using to pick the “best” option.
* Whenever possible include illustrative figures. Is there a way to visually represent the steps in your process?

Sec. IV. Computational Results

* Explicitly address all tasks in the homework assignment.
* Text should be in paragraph form, describing your results. Reference all figures.
* Figures: Include them in the main body of the report, not interspersed in the code appendices (I don’t want to have to hunt too far to track down your results). Include axis labels and informative captions. Adjust the font size on axis labels so that they are legible when you place the figure in your report.
* Compare/contrast between cases. Assess whether your results are expected or surprising. If you think something went wrong, can you hypothesize as to why?

Sec. V. Summary and Conclusions

* Wrap it up! Summarize your main results--what did you learn from this task? Tie things back to the main point of the report.
* If you have any ideas for improvements to your method, or any interesting questions or extensions mention them here.

Appendix A MATLAB functions used and brief implementation explanation

* If there are any fancy functions with a lot going on under the hood, include the function and a short description (e.g. Fminsearch(), lasso(), etc.). This would be a great place to reference the MATLAB or python documentation.
* If you wrote any special functions for the project, include a short description of the implementation as above.

Appendix B MATLAB codes

* Include all code necessary to produce your results.
* This section will mostly be checked for completeness--I will only look at sections line by line if I don’t understand what you wrote in the main body of the report, or your results are unexpected.
* That being said, this is for you and potentially your professional portfolio. Make things neat, tidy, and readable. Include comments where helpful.

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. EACH HOMEWORK 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 a homework involving the FFT, the TA may look to see if students talked about the fact that wave numbers should be scaled by 2\*pi/L where L is the domain of the signal 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.

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.

NOTE 3: The homework (as PDFs) will be turned in via the canvas class website.

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

1. Use a professional grade word processor (Latex or MSword, 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.