

AMATH 482-582 Winter Quarter 2019  
Schedule and Homework Write Ups

## Schedule of Lectures

**Lecture 1** (1/7): Chapter 13.1 (Notes 2.1)  
**Lecture 2** (1/9): Chapter 13.2 (Notes 2.2)  
**Lecture 3** (1/11): Chapter 13.3 (Notes 2.3)  
**Lecture 4** (1/14): Chapter 13.4 (Notes 2.4)  
**Lecture 5** (1/16): Chapter 13.5 (Notes 2.5)  
**Lecture 6** (1/18): Chapter 13.6 (Notes 2.6)  
**Lecture 7** (1/23): Chapter 13.7 (Notes 2.7)  
**Lecture 8** (1/25): Chapter 14.1 (Notes 3.1)  
**Lecture 9** (1/28): Chapter 14.2 (Notes 3.2)  
**Lecture 10** (1/30): Chapter 14.3 (Notes 3.3)  
**Lecture 11** (2/1): Chapter 15.1 (Notes 4.1)  
**Lecture 12** (2/4): Chapter 15.2 (Notes 4.2)  
**Lecture 13** (2/6): Chapter 15.3 (Notes 4.3)  
**Lecture 14** (2/8): Chapter 15.4-15.5 (Notes 4.4-4.5)  
**Lecture 15** (2/11): Chapter 16.1 (Notes 5.1)  
**Lecture 16** (2/13): Chapter 16.2 (Notes 5.2)  
**Lecture 17** (2/15): Chapter 16.3 (Notes 5.3)  
**Lecture 18** (2/20): Chapter 17.1 (Notes 6.1)  
**Lecture 19** (2/22): Chapter 17.2 (Notes 6.2)  
**Lecture 20** (2/25): Chapter 17.3 (Notes 6.3)  
**Lecture 21** (2/27): Chapter 18.1 (Notes 7.1)  
**Lecture 22** (3/1): Chapter 18.2 (Notes 7.2)  
**Lecture 23** (3/4): Chapter 18.3 (Notes 7.3)  
**Lecture 24** (3/6): Chapter 19.1 (Notes 8.1)  
**Lecture 25** (3/8): Chapter 19.2 (Notes 8.2)  
**Lecture 26** (3/11): Chapter 20.1 (Notes 9.1)  
**Lecture 27** (3/13): Chapter 20.2 (Notes 9.2)  
**Lecture 28** (3/15): Chapter 20.3 (Notes 9.3)

**NOTE 1:** MLK is 1/21 and Presiden's day is 2/18.

**NOTE 2:** No live lectures 1/7, 1/9, 1/11, 1/28, 2/13, 2/15, 2/27, 3/13. So please don't show up to class. Instead, the lectures will be posted online.

## Grading and Homework Write Ups

For AMATH 482, your course grade will be determined entirely from your homework (100%). There will be 5 homeworks over the quarter. Each of the homework sets will be part of your final grade, each is equally weighted (20%). This homework should be written as if it were an article/tutorial being prepared for submission. I expect a high level of professionalism on these reports.

For AMATH 582, not only do you have the 5 homeworks, but you will also do a final project on data of your choosing. You should pick a project to pursue by the middle of February (you can work with up to 2 other people). This final report is worth 1/3 of your grade (with the 5 homeworks

worth 2/3 of your grade).

The following is the expected format for homework submission:

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

Title/author/abstract Title, author/address lines, 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. **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 TAs 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 TAs may look to see if you talked about the fact that you must rescale the wavenumbers 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.

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.