MATH 444: MATHEMATICAL RESEARCH AND WRITING

Assignment 4 Due Thursday Feb 3, 2022.   Richard Anstee

I wish you to present a statement and proof of some Mathematical result. You could use a result/theorem from Assignment 2 or some other topic of your interest. For this Assignment 4, I wish you to email me a pdf file of a suitable beamer presentation for such a presentation. The course webpage has some information on beamer files. You may result/theorem of Assignment 2 or some other topic. The result/proof should be accessible but you can use other results so long as they are stated clearly. (Fundamental Theorem of Algebra anyone?). For Assignment 5, I am asking you to present this in front of the class. we will have peer review of your presentation. The goal for Assignment 5 will be a talk of at most <8 minutes using the (edited) beamer file. If there is time, we can have audience questions to bring total up to 8 minutes. We need to do 9 presentations in each of two lectures. This timing restriction should help you in preparing a beamer talk.

I will mark Assignment 4 by a variety of criteria. Clarity and correctness of the exposition will be the main focus but I am also looking for interest. Distracting flashy slides with moving pictures often receive lower grades but a well chosen example or picture is a good idea. I will pass on comments as quickly as possible so that you can edit your beamer file for Assignment 5.

To familiarize yourself with LaTeχ you should see some sample files. The same with Beamer which is just LaTeχ plus some formatting commands. There is a certain amount of syntax to get used to and I recommend you work in pairs.

To get a way to process your Teχ files, there are a number of free downloads such as Texmaker which I use on my Mac: http://www.xm1math.net/texmaker/download.html
but there are many other free downloads such as MikTeχ: https://miktex.org/download or Overleaf.

To get a manual for Lateχ, you can just google and choose one that you like.
I had used https://tobi.oetiker.ch/lshort/lshort.pdf
but google search sent me to http://texdoc.net/texmf-dist/doc/latex/latex2e-help-texinfo/latex2e.pdf
and Wikibooks: https://en.wikibooks.org/wiki/LaTeX

For Beamer, I will have posted a sample file (for our Towers of Hanoi problem) which you can then use by pasting in suitable Teχfor the content. No need to know much about the syntax or special choices that Beamer provides. A beamer manual is at
http://ftp.math.purdue.edu/mirrors/ctan.org/macros/latex/contrib/beamer/doc/beameruserguide.pdf

This assignment, combined with Assignment 5, deals with writing Mathematics clearly. It is also forcing you to familiarize yourself with LaTeX and Beamer. These software packages are ubiquitous in Mathematical research but admittedly not in common use elsewhere (Chemists and Physicists like the formatting capability of LaTeX for equations). So for most of you, this is partly an exercise in learning how to learn a new software package.