Computational Physics / PHYS-UA 210 / Problem Set #1
Due September 12, 2023

Submit the PDF generated in this assignment on Brightspace to your TA, and remember to include the name of the GitHub repository you will create below.

You *must* label all axes of all plots, including giving the *units*, where applicable!!

1. Create a GitHub account. Start a new public repository called `phys-ua210`. Clone this repository to wherever you are doing your work (e.g. your laptop). Create a `ps-1` folder in it to store the problem set results.

2. Familiarize yourself enough with a `matplotlib` and `numpy` in Python to plot a Gaussian with zero mean and a standard deviation of 3 over the range $[-10, +10]$. Make sure the Gaussian is normalized correctly. Create an executable script with the file name `plot_gaussian.py` that that writes a PNG file called `gaussian.png`. Under Linux or Mac OS, from a Terminal you would type "`python plot_gaussian.py`" to run the script. Under Windows, you should be able to type just `plot_gaussian.py`". Do not import any packages other than `matplotlib` or `numpy` to make this plot. Put the script and PNG file in the `ps-1` folder and push it to GitHub.

3. Create a short LaTeX document. You may use code on your laptop or you may use Overleaf (at `overleaf.com`). Use the format of the example file available on the course web site. Write down a your goals for this course, your background in programming and/or numerics, and (to the extent you know them) your plans after your degree is finished (grad school? industry? law school? etc.). Write just one paragraph! If you write more than a page, you have written way too much. You won't be graded on the content of this, just whether you do it!! It will also help me understand what you want out of the class. In addition, you should include a figure with the PNG figure from part (2) above; include a caption for the figure. Finally, include the name of your GitHub account. Put the PDF with the document into the `ps-1` folder and push it to GitHub.

4. When your assignment is complete, submit the PDF to Brightspace.