

PY411 / 506
Computational Physics 2

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Assumptions for this class

- You should have taken PHY410/505 or equivalent
- You should (by now) know sufficient python and C++ to code on your own
- Your write-ups should be approaching “real paper” mode at the end of the semester

Syllabus

- Homework : 50%
 - Starting off with modifying examples, then transitioning to write your own codes
- Take-home midterm: 25%
 - Partly modifying code, partly writing your own code
- Project : 25%
 - Entirely your own code

You are allowed to use any code you find from our class without citation. You are also allowed to use (simple) code from other sources if you cite them.

Project

- In a few weeks, you will be selecting a numerical task to work on throughout the semester
- It should be relatively in-depth enough to make some kind of scientific statement about it
 - It need not be original research
 - It must include some detailed numerical techniques
- The grade will be divided equally between a write-up and a presentation to the class
 - Write-up : latex, word, or jupyter notebook. This should be professional and polished.
 - Presentation: 15 minutes + 5 minutes questions.
 - Both should be professional quality

What about C++?

- We will still use “heavy lifting” in C++
- Much of the “front end”, however, is better in python, and you can use Jupyter
- We will make heavy use of SWIG

Quick Refresher