

Lesson 1 Summary

CSPP58001: Numerical Methods

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1 Course information

Welcome to Numerical Methods. If you are not registered for the course, please do so soon and inform me at felker@uchicago.edu so I can add you to the appropriate class resources. Potential auditors must meet with Prof. Siegel as soon as possible.

Sharing of course discussion and files will be done via **piazza.com** and **dropbox.com**, respectively. You must get free accounts for these websites.

MATLAB is a required language for the course, but it is not sufficient for all of the tasks. This is because MATLAB as an interpreted matrix-based language is great for quick prototyping of codes, but a compiled scalar-based code written with a good knowledge of numerics will beat the performance. While we will not teach MATLAB in class, we can hold additional sessions to get you started (it's quite easy to pick up). MATLAB is available for free on the CS cluster; you can also pick up a student license for \$99.

Therefore, you are required to do some of the assignments in C, C++, FORTRAN, Java, or Python. If you have another language you are more comfortable in, contact the TA to get it approved.

Some other course organization details:

1. We will discuss the format and scheduling of the TA office hours/discussion sections over Piazza.
2. The Gilbert Strang text listed on the syllabus is not required, but it is highly recommended. Additionally, his course videos are available for free online.
3. Late homework is penalized -10%, for a maximum of 3 days late. Late homework will not be accepted after 72 hours. You may turn in one homework late without penalty.

2 Diving in....

This class is centered around the interdisciplinary field of computational science. The topics in this field require knowledge of mathematics, computer science, and the application field (physics, chemistry, nuclear engineering, finance, etc).

The first topic we approach is ubiquitous in scientific applications. Refer to the **lesson1.pdf** and the posted PowerPoint in the Dropbox for the theoretical content of this lecture.