Lectures: MWF 11:50-12:40, LCB222

Instructor: Aaron Fogelson, LCB312, phone 581–8150, email: fogelson@math.utah.edu
Office hours: TBA
Course Web Site: http://www.math.utah.edu/~fogelson/6630_s16

Texts:


These books are available from SIAM to SIAM members (I am one) at a discount and I plan to place a group order after the first class meeting. If you are a SIAM member and want to order them before class, please do so. They are also available from Amazon etc without the SIAM member discount.

Other useful references:

3. L.N. Trefethen, Useful but not complete book draft on finite difference and spectral methods for PDEs. https://people.maths.ox.ac.uk/trefethen/pdetext.html

Course Material: This is intended as a second course in numerical methods for partial differential equations. We will cover major parts of the following material:

2. Finite difference methods for multidimensional elliptic PDEs in simple regions and solution by multigrid methods.
5. Finite difference methods for the incompressible Navier-Stokes equations.
6. Introduction to spectral methods with emphasis on Navier-Stokes equations.
**Course Work:** Course work will consist of analysis and implementation of selected methods that we discuss.

**Prerequisite:** Math 6610-6620 or its equivalent and prior experience with applied aspects of partial differential equations. This course is *not* intended as a first exposure to numerical methods for PDEs. In particular, the first topic under course material is truly intended as a review. If in doubt, consult with instructor.

**ADA statement** The American with Disabilities Act requires that reasonable accommodations be provided for students with physical, sensory, cognitive, systemic, learning and psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations for the course.