University of Florida

Sara Pollock
Department of Mathematics

College *of* Liberal Arts *and* Sciences

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Research & Students

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Courses

Numerical Analysis Research Group

Seminar on Applied and Numerical Analysis (ANA)

Department of Mathematics

AWM@UF

Finite Element Circus@UF

Links

MAD 4401 Introduction to Numerical Analysis (F22)

Time and Location
Section 12A2: M W F Period 7 (1:55-2:45pm), Fine Arts C (FAC) 127

Section 3216: M W F Period 7 (3:00-3:50pm), Little Hall (LIT) 235

Syllabus <- (that's a link, click on it!)

Homework: Posted on **Canvas**.
Assignments should be turned in by Canvas, by 6pm the day they are due. **Typed** assignments may be turned in until 6am the following morning (12 hours after the standard deadline).

Useful Links:
- UF 2022-2023 Academic Calendar
- UF Fall 2022 Dates and Deadlines
- Numerical Linear Algebra Exam Resources

Useful References:

Linear Algebra:
- Linear Algebra and its Applications. G. Strang

Numerical Linear Algebra:
- Numerical Linear Algebra. L. Trefethen and D. Bau (our textbook).
- Matrix Computations. G. Golub and C. Van Loan.
- Accuracy and Stability of Numerical Algorithms. N. Higham.

- Matrix Analysis. R. Horn and C. Johnson.

Numerical Analysis and Scientific Computation:

- Numerical Mathematics. A. Quarteroni, R. Sacco and F. Saleri.
- Numerical Analysis. D. Kincaid and W. Cheney.

This is not a programming class, but I expect you to understand and use basic control structures such as **for**, **while** and **if** statements, to assign and access variables within arrays, and to define and call functions. Sample code will be provided. Here are some **useful programming resources:**

Getting started with Matlab:

- Official "Getting started with Matlab" guide (by Mathworks)
- Official "Matlab Onramp" interactive course (by Mathworks)
- A quick tutorial on Matlab, by Gowtham Bellala, U. Mich.
- Or, just do a search on "matlab tutorial," and you will find many options.

Matlab users: Getting started with Python (and R):

- NumPy for Matlab users
- Mathesaurus: Matlab synonymous commands in Python/NumPy,R

Libraries of Test Matrices

- Description of matrices generated by Matlab's gallery function
- Sparse matrices collection by Tim Davis

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