MATH 313

Instructor: Lechao Xiao
Lecture: TTH 10:30am-12pm, Room: DRL A4
Office: 3N4C
Email: xle@math.upenn.edu
Office Hours: TTh 1-2pm and by appointment.

Textbook: *Introduction to Linear Algebra, by* **Gilbert Strang** *Fourth edition*

Course Website: Course materials/communications will be posted on Canvas:
https://canvas.upenn.edu/courses/1271654

Course Description: We plan to cover chapters 1-8 in Strang's book. Chapters 1-7 form the foundation for understanding linear algebra. This includes: solving linear systems equations, vector spaces, orthogonality and GramSchmidt algorithm, determinants, eigenvalues and eigenvectors, and linear transforms. Important applications from Chapter 8 will be sprinkled throughout the course.

Prerequisites: Math 114/ 115 or permission of the instructor.

Grading policy: Your grade for the course will be determined based on the following factors:

   (I) **Homework**: 30%

  (II) **Two Midterm Exams**: 20% each

 (III) **Final**: 30%

Homework: There will be around 10 homework assignments. Collaboration on homework assignments is encouraged, but any work you turn in must be your own. If you collaborate with other students, please write down their names. Some assignments will need to be sent to the grader electronically. Late homework will not be accepted but I will drop your lowest homework score.

Programming Throughout this course, we will play around with MATLAB (or the open source alternative, Octave.) Many homework assignments will involve programming. Any code you turn in must be your own work; copying is strictly prohibited and considered to be a serious cheating problem! If you have little or no prior programming experience, you must be willing to learn as you go.
   MATLAB is available in on-campus computer labs, see the link below
https://www.seas.upenn.edu/cets/software/matlab/). You may wish to consider purchasing your own copy, or using the free program Octave. These two languages are identical and have similar functionality.

Exams: There will be two in-class midterm exams and one final. Please let me know within the first two weeks if you have a conflict with any of these dates. Absence from an exam is a serious problem. Depending on circumstances, you may or may not be allowed to make up a missed midterm exam.

1. Midterm Exam 1: Feb 17th, Tuesday, in-class.

2. Midterm Exam 2: March 24th, Tuesday, in-class.

3. Final Exam: To be announced.

Students with Disabilities: Please dont hesitate in contacting SDS: http://www.vpul.upenn.edu/lrc/sds/.

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