University of Pittsburgh
Department of Mathematics

MATH 1080 Numerical Linear Algebra

Term: Spring 2017
316 Old Engineering Hall
MWF 10:00am - 10:50am

Instructor: Dr. Patrick Cooper
E-Mail: patrick.cooper8771@gmail.com
Phone: (929) 431-7650
Office: 622 Thackeray
Office Hours: Monday 4:00-5:00pm

Course Description: This course will cover the basic areas of numerical linear algebra including solving systems of equations, error analysis and iterative methods such as the conjugate gradient method and eigenvalue problems. 3 credits.

Prerequisites: Basic knowledge of both linear algebra and computer programming are assumed. No particular programming language will be required. I will use Python, but if you're looking for something with the easiest out-of-the-box implementation, I recommend MatLab which can be purchased from the University for a small fee (O($5)).

Text: "Numerical Linear Algebra" by Layton and Sussman.

Print Copy (O($20)): **http://www.lulu.com/shop/william-layton-and-myron-sussman/numerical-linear-algebra/paperback/product-21710031.html**

Free E-Book (O($ε^2)): **http://www.lulu.com/shop/william-layton-and-myron-sussman/numerical-linear-algebra/ebook/product-21710245.html**

Academic Integrity Policy: The University of Pittsburgh Academic Integrity Code is available at http://www.fcas.pitt.edu/academicintegrity.html. The code states that "A student has an obligation to exhibit honesty and to respect the ethical standards of the academy in carrying out his or her academic assignments." The website lists examples of actions that violate this code. Students are expected to adhere to the Academic Integrity Code, and violations of the code will be dealt with seriously. On homework, you may work with other students or use library resources, but each student must write up

his or her solutions independently. Copying solutions from other students will be considered cheating, and handled accordingly.

Students with Disabilities: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 140 William Pitt Union, 412-648-7890 or 412-383-7355 (TTY) as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Grading:

25% - Midterm 1
25% - Midterm 2
25% - Final Exam
25% - Homework

Course Grades:

A	**94-100**
A-	**90-93**
B+	**87-89**
B	**83-86**
B-	**80-82**
C+	**77-79**
C	**70-76**
D	**60-69**
F	**<60**

Final Exam: While the final exam is not worth more than the other exams, because it is cumulative, it is the most important, therefore your final grade cannot exceed your final exam grade by more than one letter grade.

Homework Policy: Assignments will be collected Monday at the **beginning** of class. By 15 minutes into the class period, **no** more assignments will be received. This is to prevent the temptation to spend the class period working on your assignment instead of paying attention to the lecture. I highly encourage you to work together but please turn in assignments which are your own. See academic integrity policy.

Approximate Class Schedule:

Jan 4-6 Week 1:

Jan 9-13 Week 2:

Jan 18-20 Week 3:

Jan 23-27 Week 4:

Jan 30 - Feb 3 Week 5:

Feb 6-10 Week 6:

Feb 13-17 Week 7:

Feb 20-24 Week 8:

Feb 27 - March 3 Week 9:

March 13-17 Week 10:

March 20-24 Week 11:

March 27-31 Week 12:

April 3-7 Week 13:

April 10-14 Week 14:

April 17-21 Week 15: