

Linear Algebra MAS4105/14G8

Instructor

Prof. Peter Sin

Time and Location

MTWF Per. 5, Little 235.

Office Hours:

(Tentative) MTW Per. 6, Little 432, and by appointment.

Description and Goals

The course provides a rigorous and thorough introduction to linear algebra, a subject which is basic to nearly all branches of pure and applied mathematics, with many applications in science, engineering and economics.

The student will learn to read and write proofs of theorems, and develop computational skills. This course is designed to serve majors in mathematics and those engineering and science students interested in a conceptual understanding of the subject.

Textbook

Linear Algebra, by Insel, Friedberg and Spence (4th ed.)

Software

GNU octave is free, open source Matlab-like numerical linear algebra software that is easy to install and use.

Matlab is somewhat bigger, fancier, and not free.

You are not required to use octave or Matlab, but they are useful tools for learning linear algebra.

Course Calendar

MAS4105-Calendar

Homework

The list of homework problems appears below. You should try to solve **all** of the assigned problems. I will select certain problems to be written up carefully and turned in for grading. You may discuss ideas to solve homework problems with your classmates, but the written work turned in for grading must be entirely your own.

Chapter 1:

Sect. 1.2: 1, 7, 11, 12, 13, 18.

Sect. 1.3: 1, 5, 8, 11, 12, 13, 15, 17, 22.

Sect. 1.4: 1, 2, 3, 5, 6, 12.

Sect. 1.5: 1, 3, 4, 5, 7, 10, 16, 18, 20.

Sect. 1.6: 1, 2, 3, 6, 11, 26.

Chapter 2:

Sect. 2.1: 1, 3, 9, 12, 13, 15, 16, 17.

Sect. 2.2: 1, 2(a), 5(c), 10, 16.

Sect. 2.3: 1, 2(b), 3(a), 4(a), 9, 12.

Sect. 2.4: 1, 2(e,f), 6, 9, 16, 20.

Sect. 2.5: 1, 2(a), 3(a), 5, 7.

Chapter 3:

Sect. 3.1: 1, 4.

Sect. 3.2: 1, 2(a,b), 3, 5(a), 6(c), 8, 14.

Sect. 3.3: 1, 2(a,b), 4(a), 9, 10.

Sect. 3.4: 1, 2(a,b), 3, 9, 10.

Chapter 4:

Sect. 4.1: 1, 2(a,b), 4(a,b), 8, 12.

Sect. 4.2: 1, 2, 5, 13, 23, 26.

Sect. 4.3: 1, 2, 9, 10, 12, 15, 17, 20, 21.

Chapter 5:

Sect. 5.1: 1, 3(b), 4(a), 8(a), 17(a), 21(b).

Sect. 5.2: 1, 2(b,d), 3(a,b), 9, 16, 13.

Chapter 6:

Sect. 6.1: 1, 3, 8, 11, 13, 15, 24, 27.

Sect. 5.1: 1, 2(a), 3(a), 4(a), 5(a), 6(a), 7(a).

Sect. 5.2: 1, 2(b,d), 3(a,b), 9, 16, 13.

Chapter 6:

Sect. 6.1: 1, 3, 8, 11, 13, 15, 24, 27.

Sect. 6.2: 1, 2(a), 6, 8, 19(a).

Sect. 6.3: 1, 2(a), 3, 6, 7, 10, 15.

Exams and Grading Policy

There will be 2 class exams each worth 20 points and a final exam worth 40 points. Homework is worth 20 in total. Your grade will be based on the total (out of 100) of your homework score and the scores on these three exams. The dates of the class exams and final are given in the course calendar. No make-up exams will be given except for documented special reasons, such as medical emergencies. Exams can be rearranged for student athletes only if I am notified at least four weeks in advance.

If you think that a score has been **computed incorrectly**, please bring the matter to my attention within one day of your work being returned.

If you think that your work has been **graded incorrectly**, please submit an appeal in writing within seven days of your work being returned, explaining your reasons in detail. Appeals may result in a higher, unchanged, or lower score, depending on the merit of the appeal. Decisions on appeals are final. The final exam cannot be appealed.

Grading Scale

Grades: A=90-100, A-=87-89, B+=83-86, B=78-82, B-=75-77, C+=70-74, C=65-69, C-=60-64, D=50-59, E=0-49

The UF regulations on grades are here: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

The UF policy on minus grades is here: <http://www.isis.ufl.edu/minusgrades.html>.

Attendance and Late Policy

Attendance is mandatory, except for absences allowed by UF policies. Each unexcused absence (after you are registered) carries a penalty of 1 point, subtracted from your score after the total (out of 100) has been computed.

The UF policy on attendance is here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Special accommodations

Students requesting classroom accommodation must first register with the Dean of Student Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Honor Code

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>)

specifies a number of behaviors that are in violation of this code and the possible sanctions.

Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class.

Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.