

**North Carolina State University      Department of Mathematics**  
MA 305 Introduction to Linear Algebra   Fall 2017

**Instructor:** Dr. N. Jing, Office: SAS 3142, 3-3584. email: jing@ncsu.edu

**Lectures:** TH, 8:30–9:45, DAB 124

**Office Hours:** TH, 3:15–4:15 TA office hour:

**TA:** Additional information will be added to the syllabus when TA's office hours are known. The webpage will post additional information from time to time. The final consists of the final project and exam, and the final is scheduled according to university calendar.

**Schedule:** Chaps. 1–6 and part of Chap. 7 in David Lay, Steven Lay and Judi McDonald's book: Linear Algebra and its Applications, 5th ed., Pearson, 2016.

Chapter	Topics	Week
1-2	Linear Systems, echelon forms, vector equations	1
	solutions of $Ax = b$ , matrix operators	2
	Inverse, invertibility, Applications	3
	span, vector equations, linear independence	4
	linear transformations, matrix representation	5
3	Determinants, Cramer's rule	6
4	Vector spaces, subspaces, nullspaces	7
	row/column spaces, Bases, coordinate vectors	8
	rank, base change, linear transformation revisit	9
5	Eigenvalue eigenvectors, char. equations	10
	Diagonalization problem	11
	appl. to diff. equations	12
6	Inner product, orthogonal sets, Gram-Schmidt	13
	Least squares, normal equation	14
Sep.19 Tu	Test 1,	(in class)
Oct.12 Th	Test 2,	(in class)
Nov.16 Th	Test 3	(in class)
Nov.30 Th	Project	(in class)
Dec.5 Tu	8-11 Final	(in class)

**Attendance** You are required to attend each class. Usually no permission is granted for skipping a test, unless this is entirely unforeseen medical condition or other similar situation. Proper documentation must be established, otherwise your score is deemed to be zero. If you miss a test by an excused reason, the mark for that test will be determined by your later performance. No make-up tests will be planned for any situation.

**Grading Policy** Your grades will be calculated by the following weight scale

Quizzes 2%+Attendance 2%+ 3 Exams 55%+Project 8% & Final 33%

**Quizzes and Homeworks** Weekly homework consists of reading assignment and problems to you prepare for the tests.

**Attendance is required.** NCSU policy is strictly enforced. You may review the definition of excused absences at <http://policies.ncsu.edu/regulation/reg-02-20-03> No quiz or test makeups will be granted.

**Course Evaluations:** Online class evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors.