

MATH 2700.003: Linear Algebra and Vector Geometry

TIME AND PLACE: MoWeFr 1:25PM - 2:15PM, BLB 260

PROFESSOR: Santiago I. Betelú

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TEXT: DC Lay, SR Lay and JJ McDonald, "Linear Algebra and its Applications", Sixth edition

OFFICE HOURS: MoWeFr 11:10 AM -13:15 PM

COURSE DESCRIPTION: Vector spaces over the real numbers, applications to systems of linear equations and analytic geometry, linear transformations, matrices, algebra, determinants and eigenvalues.

GRADES: Grades will be based on three midterm exams (20 points each), homeworks and quizzes (20 points) and a final exam (40 points). The lowest of the midterm grades is dropped, so the maximum score is 100. To earn an A you need 90 points, 80 for a B, 70 for a C and 60 for a D.

HOMEWORK: Will be assigned in Canvas and your solutions must be uploaded within the indicated deadline. Check your solutions with the solutions at the end of the textbook, if you don't get them come to my office for help. The grader evaluates the intermediate steps so you must be clear to get the full grade.

EXAMS: Midterm exams will be given on Sep 25, Oct 30 and Nov 20 during regularly scheduled class time. The final exam is scheduled on Dec 9 at 10:30 AM-12:30PM on the same classroom (these dates may change, so ask me one week before).

DISSABILITIES: It is responsibility of students with certified disabilities to provide the instructor with appropriate documentation from the Dean of Students Office. If you qualify for extra time you must take the exam at the ODA Testing Center.

CHEATING: or homework plagiarism will not be tolerated. Anyone caught cheating will receive an F for the course. Notes, calculators or electronic devices are not allowed during exams.

SCHEDULE

Week	Sections	Summary
Aug 17	1.1, 1.2	Systems of linear equations. Row reduction and echelon forms
Aug 24	1.3, 1.4	Vector equations. The matrix equation $Ax = b$
Aug 31	1.5, 1.6	Solution sets of linear systems. Applications.
Sep 09	1.7	Linear independence.
Sep 14	1.8	Introduction to linear transformations.
Sep 21	1.9	The matrix of a linear transformation
Sep 28	2.1	Matrix operations.
Oct 05	2.2, 2.3	The inverse of a matrix. Characterization of invertible matrices.
Oct 14	2.4	Partitioned matrices.
Oct 19	2.5, 2.7	Matrix factorizations. Applications.
Nov 2	4.1, 4.2	Vector spaces and subspaces. Null spaces, column spaces, and linear transformations.
Nov 9	4.3, 4.4, 4.5, 4.6	Linearly independent sets. Bases. Coordinate systems. The dimension of a vector space. Rank.
Nov 16	3.1, 3.2	Introduction to determinants. Properties of determinants.
Nov 23	5.1, 5.2	Eigenvectors and eigenvalues. The characteristic equation. Diagonalization.
Dec 9		Final Exam Wed Dec 9 at 10:30 AM-12:30PM