

Math 20580 schedule

Spring 2025

January 13	Poole 2.1, 2.2: Gaussian elimination, row echelon form
15	2.2: Gauss-Jordan elimination, free and leading variables
17	2.3, 3.1, 3.3: spans, matrix operations
20	Martin Luther King day; no classes
22	3.6: linear transformations
24	2.3, 3.5: linear independence, subspaces
27	3.5: row, column, null space of a matrix; basis for a subspace
29	3.5: dimension, rank, nullity
31	6.3: coordinate systems in \mathbb{R}^n
February 3	6.3: change of basis
5	6.1: vector spaces and subspaces
7	6.2: linear independence, basis, dimension in a vector space
10	6.4: linear transformations
12	Review and leeway
13	Exam 1: 8:00–9:15 a.m.
14	6.2, 6.5: kernel and range, isomorphisms, coordinates in a vector space
17	6.3, 6.6: change of basis in a vector space, matrix of a linear transformation
19	6.6: more on matrix of a linear transformation
21	4.2: intro to determinants
24	4.2: more on determinants, Cramer's rule
26	4.1, 4.3: eigenvectors and eigenvalues
28	4.4: similarity
March 3	4.4: diagonalization
5	Review and leeway
6	Exam 2: 8:00-9:15 a.m.
7	4.1, 4.3: complex eigenvalues
March 8–16	Spring Break
17	1.2, 5.1, 5.2: orthogonality, orthogonal complements
19	5.1, 5.2: orthogonal projection, orthonormal sets
21	5.1, 5.3: orthonormal sets, Gram-Schmidt process, QR factorization
24	5.3, 7.3: QR factorization, least squares solutions
26	7.3: least squares solutions
28	Zill 1.1, 1.2: classification of differential equations, solutions, initial value problems
31	2.1, 2.2: Direction fields, autonomous equations, separable equations
2	2.3, 2.4: linear first order ODEs, exact equations
4	2.4, 3.1: more on exact equations, modeling with first order equations
7	4.1: second order linear ODEs
9	4.1, 4.2: more on second order ODEs, Wronskians, reduction of order
11	4.3: second order homogeneous equations with constant coefficients
14	4.4: nonhomogeneous equations –method of undetermined coefficients
16	Review and leeway
17	Exam 3: 8:00-9:15 a.m.
April 18	
–April 21	Easter
23	4.4: nonhomogeneous equations –method of undetermined coefficients
25	4.4, 4.6: more on undetermined coefficients, variation of parameters
28	4.6: more on variation of parameters
30	Vibrations: Review and leeway
May 7	Final Exam: 8:00–10:00 a.m.