	Math 20580 schedule	Fall 2023
August 23	**Poole** 2.1, 2.2: Gaussian elimination, row echelon form	
25	2.2: Gauss-Jordan elimination, free and leading variables	
28	2.3, 3.1, 3.3: spans, matrix operations	
30	3.6: linear transformations	
September 1	2.3, 3.5: linear independence, subspaces	
4	3.5: row, column, null space of a matrix; basis for a subspace	
6	3.5: dimension, rank, nullity	
8	6.3: coordinate systems in $\mathbb{R}^n$	
11	6.3: change of basis	
13	6.1: vector spaces and subspaces	
15	6.2: linear independence, basis, dimension in a vector space	
18	Review and leeway	
September 19	**Exam I: 8:00–9:15 a.m.**	
20	6.4: linear transformations	
22	6.2, 6.5: kernel and range, isomorphisms, coordinates in a vector space	
25	6.3, 6.6: change of basis in a vector space; matrix of a linear transformation	
27	6.6: more on matrix of a linear transformation	
29	4.2: intro to determinants	
October 2	4.2: more on determinants, Cramer's rule	
4	4.1, 4.3: eigenvectors and eigenvalues	
6	4.4: similarity	
9	4.4: diagonalization	
11	4.6: complex eigenvalues	
13	1.2, 5.1, 5.2: orthogonality, orthogonal complements	
October 14–22	**Spring Break**	
23	5.1, 5.2: orthogonal projection, orthonormal sets	
25	Review and leeway	
October 26	**Exam II: 8:00–9:15 a.m.**	
27	5.1, 5.3: orthonormal sets, Gram-Schmidt process, QR factorization	
30	5.3, 7.3: QR factorization, least squares solutions	
November 1	7.3: least squares solutions	
3	**Zill** 1.1, 1.2: classification of differential equations, solutions, initial value problems	
6	2.1, 2.2: Direction fields, autonomous equations, separable equations	
8	2.3, 2.4: linear first order ODEs, exact equations	
10	2.4, 3.1: more on exact equations, modeling with first order equations	
13	Review and leeway	
November 14	**Exam III: 8:00–9:15 a.m.**	
15	4.1: second order linear ODEs	
17	4.1, 4.2: more on second order ODEs, Wronskians, reduction of order	
21	4.3: second order homogeneous equations with constant coefficients	
November 22–26	**Thanksgiving holiday**	
27	4.4: nonhomogeneous equations – method of undetermined coefficients	
29	4.4, 4.6: more on undetermined coefficients, variation of parameters	
December 1	4.6: more on variation of parameters	
4	5.1: Vibrations	
6	Review and leeway	
December 13	**Final Exam 1:45–3:45 p.m.**	