	Math 20580 schedule	**Spring 2023**
January 18	**Poole** 2.1, 2.2: Gaussian elimination, row echelon form	
20	2.2: Gauss-Jordan elimination, free and leading variables	
23	2.3, 3.1, 3.3: spans, matrix operations	
25	3.6: linear transformations	
27	2.3, 3.5: linear independence, subspaces	
30	3.5: row, column, null space of a matrix; basis for a subspace	
February 1	3.5: dimension, rank, nullity	
3	6.3: coordinate systems	
6	6.3: change of basis	
8	6.1: vector spaces and subspaces	
10	6.2: linear independence, basis, dimension	
13	6.4: linear transformations	
15	Review and leeway	
February 16	**Exam I: 8:00–9:15 a.m., covers material until February 15**	
17	6.2, 6.5: kernel and range, isomorphisms, coordinates in a vector space	
20	6.3, 6.6: change of basis in a vector space; matrix of a linear transformation	
22	6.6: more on matrix of a linear transformation	
24	4.2: intro to determinants	
27	4.2: more on determinants, Cramer's rule	
March 1	4.1, 4.3: eigenvectors and eigenvalues	
3	4.4: similarity	
6	4.4: diagonalization	
8	Review and leeway	
March 9	**Exam II: 8:00–9:15 a.m., covers mostly material February 17–March 8**	
10	4.6: complex eigenvalues	
March 11–19	**Spring Break**	
20	1.2, 5.1, 5.2: orthogonality, orthogonal complements	
22	5.1, 5.2: orthogonal projection, orthonormal sets	
24	5.1, 5.3: orthonormal sets, Gram-Schmidt process, QR factorization	
27	5.3, 7.3: QR factorization, least squares solutions	
29	7.3: least squares solutions	
31	**Zill** 1.1, 1.2: classification of differential equations, solutions, initial value problems	
April 3	2.1, 2.2: Direction fields, autonomous equations, separable equations	
5	2.3, 2.4: linear first order ODEs, exact equations	
April 7–10	**Easter holiday**	
12	2.4, 3.1: more on exact equations, modeling with first order equations	
14	4.1: second order linear ODEs	
17	4.1, 4.2: more on second order ODEs, Wronskians, reduction of order	
19	Review and leeway	
April 20	**Exam III: 8:00–9:15 a.m., covers mostly material March 10–April 19**	
21	4.3: second order homogeneous equations with constant coefficients	
24	4.4: nonhomogeneous equations – method of undetermined coefficients	
26	4.4, 4.6: more on undetermined coefficients, variation of parameters	
28	4.6: more on variation of parameters	
May 1	5.1: Vibrations	
3	Review and leeway	
May 8	**Final Exam 1:45–3:45 p.m., covers all material**	