Math 20580 schedule   Spring 2024

January 17	**Poole** 2.1, 2.2: Gaussian elimination, row echelon form
19	2.2: Gauss-Jordan elimination, free and leading variables
22	2.3, 3.1, 3.3: spans, matrix operations
24	3.6: linear transformations
26	2.3, 3.5: linear independence, subspaces
29	3.5: row, column, null space of a matrix; basis for a subspace
31	3.5: dimension, rank, nullity
February 2	6.3: coordinate systems in $\mathbb{R}^n$
5	6.3: change of basis
7	6.1: vector spaces and subspaces
9	6.2: linear independence, basis, dimension in a vector space
12	6.4: linear transformations
14	Review and leeway
15	**Exam 1:** 8:00–9:15 a.m.
16	6.2, 6.5: kernel and range, isomorphisms, coordinates in a vector space
19	6.3, 6.6: change of basis in a vector space, matrix of a linear transformation
21	6.6: more on matrix of a linear transformation
23	4.2: intro to determinants
26	4.2: more on determinants, Cramer's rule
28	4.1, 4.3: eigenvectors and eigenvalues
March 1	4.4: similarity
4	4.4: diagonalization
6	Review and leeway
7	**Exam 2:** 8:00-9:15 a.m.
8	4.1, 4.3: complex eigenvalues
March 9–17	Spring Break
18	1.2, 5.1, 5.2: orthogonality, orthogonal complements
20	5.1, 5.2: orthogonal projection, orthonormal sets
22	5.1, 5.3: orthonormal sets, Gram-Schmidt process, QR factorization
25	5.3, 7.3: QR factorization, least squares solutions
27	7.3: least squares solutions
March 29 –April 1	Easter
3	**Zill** 1.1, 1.2: classification of differential equations, solutions, initial value problems
5	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
12	4.1: second order linear ODEs
15	4.1, 4.2: more on second order ODEs, Wronskians, reduction of order
17	Review and leeway
18	**Exam 3:** 8:00-9:15 a.m.
19	4.3: second order homogeneous equations with constant coefficients
22	4.4: nonhomogeneous equations –method of undetermined coefficients
24	4.4, 4.6: more on undetermined coefficients, variation of parameters
26	4.6: more on variation of parameters
29	5.1: Vibrations
May 1	Review and leeway
May 7	**Final Exam:** 1:15–3:45 p.m.