

DAY	SECTION	DUE	TOPIC
M 8.29	1.1		Course introduction; vocabulary related to ODEs
W 8.31	1.2		What makes a differential equation "linear"
F 9.2	1.2	1-18	More on linearity
M 9.5			<i>No class - Labor Day</i>
W 9.7	1.3-1.4		Exponential growth and decay
F 9.9	1.4	19-29	Slope fields for first-order ODEs
M 9.12	1.5-1.6		Euler's method; existence and uniqueness
W 9.14	1.6-1.7		Picard's method; intro to autonomous equations
F 9.16	1.7		Classification of equilibria
M 9.19	1.8	30-42	Bifurcations
W 9.21	1.8		More on bifurcations
F 9.23	1.9		Separable equations
M 9.26	1.10	43-54	Exact equations
W 9.28	1.11		Integrating factors
F 9.30	1.12	55-62	General solution of a first-order linear system
M 10.3	1.12		Method of undetermined coefficients
W 10.5	1.13		Compartmental models
F 10.7	1.13	63-75	Heating and cooling models; RL and RC circuits
M 10.10			Review
W 10.12			<b>EXAM 1</b>
F 10.14	2.1-2.2		Introduction to systems of ODEs; Euler's method for systems
M 10.17	2.3-2.4		Existence and uniqueness for systems; matrix operations
W 10.19	2.4-2.5	76-90	Inverses and determinants
F 10.21	2.6-2.7		Characterization of linear systems
M 10.24	2.7		Theoretical solution of first-order linear systems
W 10.26	2.8		Autonomous systems; analysis of phase planes
F 10.28	2.9	91-108	Matrix exponentials
M 10.31	2.9		The meaning of eigenvalues and eigenvectors
W 11.2	2.9-2.10		Introduction to complex numbers
F 11.4	2.10-2.11	109-123	Solving systems with complex eigenvalues
M 11.7	2.11		More on systems with complex eigenvalues
W 11.9	2.12-2.13	124-130	Repeated eigenvalues
F 11.11	2.14		Non-homogeneous systems
M 11.14	2.15		Classification of equilibria
W 11.16		131-145	Review
F 11.18			<b>EXAM 2</b>
M 11.21	3.1-3.2		Higher-order equations and systems; reduction of order
W 11.23			<i>No class - Thanksgiving break</i>
F 11.25			<i>No class - Thanksgiving break</i>
M 11.28	3.2		Constant-coefficient higher-order equations
W 11.30	2.16		Interconnected tanks; SIR models
F 12.2	3.7	146-156	Mass-spring systems
M 12.5	3.7		Pendulums and electrical circuits
W 12.7			Review
F 12.9			<b>EXAM 3</b>
T 12.13		157-163	<b>FINAL EXAM</b> 10-11:40 AM in SCI 136