MATH 252 - Summer 2019 Schedule (Tentative)

Note : Sections N_1, N_2, N_3, N_4 lecture notes can be found on the Math department course website under Supplement.

Lecture	Section	Topics	Homework
1	N1, 1.1	Modeling via Differential Equations	3, 5, 15, 17, 19, 21
	1.2	Separation of variables	1, 3, 7, 13
2	1.2	Separation of Vars (continued)	25, 29, 31, 35
	1.3	Slope Fields	all odd 1-13, 14, 15, 17
3	1.4	Euler's Method	1, 13, 15.
	1.5	Existence and Uniqueness	1, 3, 5, 7, 10.
4	1.6	Equilibria and Phase Line	1, 3, 5, 7, 13, 15, 23, 25, 27, 31, 33, 37, 39, 43
	N2, 1.7	Bifurcations	1, 3, 5, 9, 11, 17.
5	1.8	Linear Differential Equations	all odd 1-13, 21, 23.
	1.9	Integrating Factors	all odd 1-11, 21, 23.
6	2.1	Modelling via Systems	1, 2, 7, 8, 9, 17, 19, 21, 23, 25, 26, 27, 29
7	2.2	Geometry of Systems	all odd 1-27.
8	2.3	Analytic Methods	all odd 1-11, 19
	2.4	Euler's Method	1, 3, 5, 14, 15.
9	N3	Phase Plane	all
10	3.1	Linear Systems	all odd 1-9, 13, 17, 19, 21, 27, 29, 33, 35
	N4	Matrix Exponentials	
11	N4	Matrix Exponentials (continued)	all

Lecture	**Section**	**Topics**	**Homework**
12	3.2	Straight-Line Solutions	all odd 1-19
13	3.3	Phase Plane: Real Eigenvalues	all odd 1-15
14	3.4	Phase plane: Complex Eigenvalues	all odd 1-15, 19, 21, 23
15	3.5	Repeated and Zero Eigenvalues	all odd 1-17.
16	3.7	The Trace-Determinant Plane (emphasizing one-parameter families)	parts "c" of: 3, 7, 11, 13
17	3.6	Second-Order Linear	all odd 13-29; 36(a,b)
	3.8	3-Dim Linear	4, 5, 6, 7.
18	4.1	Forced Harmonic Oscillators	all odd 1-41.
	4.2	Sinusoidal Forcing	odd 1-13, 17, 27.
19	4.4	Steady State	write the steady-state solution of the odd problems 1-9 of section 4.2 in the form $A\cos(\omega t + f)$
	4.3	Resonance	all odd 1-17, 21
20	5.1	Equilibria, Linearization	all odd 1-17, except 5
21	8.1	Discrete Systems	all odd 1-9, 15, 19, 23, 27, 31
22	8.2	Fixed/Periodic points	1, 7, 9, 13, 15