Prof. Andrew Ross				Math 319, CRN 11379; Tue/Thu 12:30-1:45, PH 502		
Block#	Date 2015	day	unit	topics	HW assigned	HW due
1	9/8	Tue	general modeling	intro; math model examples; a math model has; graph sketching	M1	
2	9/10	Thu	general modeling	bloom's taxonomy; CCSS-M standards for mathematical practice; malaria nets--start simple; evacuation; modeling cycle	M2	M1
3	9/15	Tue	general modeling	real modeling cycle; oper tact strat; airline problems; concept maps; intro to excel (graphing, label axes, title, autofill, control-shift-down)	M3	M2
4	9/17	Thu	regression	linear regression: houses, predictions, residuals, graph residuals!	R1, R2	M3
5	9/22	Tue	regression	R^2; school district data; correlation/causation; ecological fallacy; common resid graphs; basic procedure; LSRL math model; averaging before regression?	R3	R1
6	9/24	Thu	regression	Pre-Lab at home: 4-function pre-quiz; in-class: answers; exponential fits, compound interest		R3 before class, R2
7	9/29	Tue	regression	yeast; logplots; power fit	R4	
8	10/1	Thu	regression	log-of-log, model selection, occam's razor, multivariate regression school data	R5	R4
9	10/6	Tue	regression	heat index; polynom; sines		R5
10	10/8	Thu	regression	falstad.com java fourier app; averaging and regression; waves and trends	R6	
11	10/13	Tue	regression	Quiz on R5; Logistic; overfitting/crossvalidation; Machine Learning overview	R7, R8, R9	R6
12	10/15	Thu	optimization	LP toys, wyndor (no sensitivity analysis), knapsack, swimmers	O1	R7
13	10/20	Tue	optimization	shift scheduling; network flow	O2	R9
14	10/22	Thu	optimization	Networks		O1
15	10/27	Tue	optimization	MCNF node-node; ramen; brief fast-food intro; sensitivity analysis on wyndor; feas region; fundamental theorem of LP	O3, M4	O2
16	10/29	Thu	optimization	example papers: dinosaur and relay; NLP: manufacturing, electricity		O3, M4
17	11/3	Tue	optimization	concavity		proposal 1
18	11/5	Thu	optimization	airport	O4	
19	11/10	Tue	optimization	shotspotter	O5	
20	11/12	Thu	dynsys	Dynamical Systems; PID; credit card, repeated dosing		O4, O5
21	11/17	Tue	projects	Project Presentations		project 1
22	11/19	Thu	projects	Project Presentations		
23	11/24	Tue		limited population growth; quiz	D1	
24	11/26	Thu		Thanksgiving		
25	12/1	Tue	dynsys	pagerank; leslie; SIR; pred/prey;oilspill	D2	D1
26	12/3	Thu	dynsys	multiple initial conditions; equilibria; delta plots; phase-plane plots; fitting limited-pop growth	D3	proposal2
27	12/8	Tue	dynsys	observation noise, process noise		D2
28	12/10	Thu	dynsys	repeated dosing? accel/vel/pos? chaos? splines? PERT/CPM?	D4, M5, M6	D3
29	12/15	Tue	presentations	presentations; M5 & M6 discussion		project 2, D4, M5, M6