

Prof. Andrew Ross				Math 319, CRN 11093; Tue/Thu 12:30-1:45; Pray-Harrold 324				
Block#	Date 2017	day	unit	topics	<a href="#">Bonus Excel</a>	HW assigned	HW due	Python goals
1	9/7	Thu	general modeling	intro; math model examples; a math model has; graph sketching		M1		
2	9/12	Tue	general modeling	bloom's taxonomy; CCSS-M standards for mathematical practice; malaria nets--start simple; evacuation; modeling cycle	text-to-column	M2	M1	import csv file
3	9/14	Thu	general modeling	real modeling cycle; oper tact strat; airline problems; concept maps; intro to excel (graphing, label axes, title, autofill, control-shift-down)	left/mid/right and =DATE	M3	M2	matplotlib statsmodels.OLS or sklearn.linear_model. LinearRegression
4	9/19	Tue	regression	linear regression: houses, predictions, residuals, graph residuals!	vlookup	R1, R2	M3	
5	9/21	Thu	regression	R <sup>2</sup> ; school district data; correlation/causation; ecological fallacy; common resid graphs; basic procedure; LSRL math model; averaging before regression?	marked scatterplots	R3	R1	
6	9/26	Tue	regression	Pre-Lab at home: 4-function pre-quiz; in-class: answers; exponential fits, compound interest	sparklines		R3 before class, R2	
7	9/28	Thu	regression	yeast; logplots; power fit	Pivot Tables	R4		logarithms and linear regression
8	10/3	Tue	regression	log-of-log, model selection, occam's razor, multivariate regression school data	parallel axis plots	R5	R4	multiple regression
9	10/5	Thu	regression	heat index; polynom; sines	LiveRegression		R5	numpy.polyfit
10	10/10	Tue	regression	falstad.com java fourier app; waves and trends		R6		FFT? voiceprint?
11	10/12	Thu	regression	Quiz on R5; Logistic; overfitting/crossvalidation; Machine Learning overview	generating random numbers	R7, R8, R9	R6	generating random num scipy.optimize.linprog vs PuLP
12	10/17	Tue	optimization	LP toys, wyndor (no sensitivity analysis), knapsack, swimmers		O1	R7	
13	10/19	Thu	optimization	shift scheduling; network flow		O2	R9	
14	10/24	Tue	optimization	Networks			O1	
15	10/26	Thu	optimization	MCNF node-node; ramen; brief fast-food intro; sensitivity analysis on wyndor; feas region; fundamental theorem of LP		O3, M4	O2	
16	10/31	Tue	optimization	example papers: dinosaur and relay; NLP: manufacturing, electricity	Pasting into Word/PPT: live or dead copies?		O3, M4	scipy.optimize. minimize
17	11/2	Thu	optimization	concavity			proposal 1	
18	11/7	Tue	optimization	airport		O4		
19	11/9	Thu	optimization	shotspotter		O5		
20	11/14	Tue	dynsys	Dynamical Systems; PID; credit card, repeated dosing			O4, O5	for-loop
21	11/16	Thu	projects	Project Presentations			report 1; presentation 1	
22	11/21	Tue	projects	Project Presentations		M6		
23	11/23	Thu		Thanksgiving break				
24	11/28	Tue		limited population growth; quiz		D1	M6 (yes, before M5.)	
25	11/30	Thu	dynsys	pagerank; leslie; SIR; pred/prey;oilspill		D2	D1	
26	12/5	Tue	dynsys	multiple initial conditions; equilibria; delta plots; phase-plane plots; fitting limited-pop growth		D3	proposal2	
27	12/7	Thu	dynsys	observation noise, process noise			D2	
28	12/12	Tue	dynsys	repeated dosing? accel/vell/pos? chaos? splines? PERT/CPM? wrapup; M5 & M6 discussion		D4, M5	D3	
29	12/14	Thu		no class--other classes having finals			D4, M5	
	12/19	Tue	presentations	present in "final exam" slot: 11:30am-1:00 AN HOUR EARLY!			report 2; presentation 2	