

Tentative outline of lecture topics

Date	Lecture	Topic	Reading		
			<u>Zar, 4th ed.</u>	<u>Zar, 3rd ed</u>	<u>JMP Start, 3rd ed.</u>
		<u>Introduction, data visualization, and distributions</u>			
30-Aug	1	Objectives, overview and organization			
1-Sep	2	Visualizing distributions	1-19	1-18	1-24
6-Sep	3	Descriptive statistics, robust measures	20-40	19-38	115-133
		<u>Uncertainty analysis and error propagation</u>			
8-Sep	4	Normal distribution, standard error, central limit theorem	58-78	65-79	133-136**
13-Sep	5	Reporting uncertainty and confidence intervals			
15-Sep	6	Simple error propagation rules			
20-Sep	7	Gaussian error propagation, method of moments			
22-Sep	8	Aggregation errors in non-linear systems			
		<u>Power analysis and hypothesis testing</u>			
27-Sep	9	One-sample hypothesis testing (t-test)	79-86, 91-105	79-86, 93-107	91-102,137-160
29-Sep	10	Significance, power, and sample size	79-86, 105-110	108-113	
4-Oct	11	Two-sample hypothesis testing (t-test)	122-139	123-141	161-177
6-Oct	12	Nonparametric two-sample comparisons (rank-sum test)	145-155	146-156	
11-Oct	13	Increasing power with paired-sample tests	161-169	163-171	178-198
13-Oct	14	Multi-sample comparisons (ANOVA)	177-200	179-197	199-228
18-Oct	15	ANOVA and Tukey Test	208-219	211-220	
		<u>Regression and correlation</u>			
20-Oct	16	Linear regression	324-337	317-330	229-244
25-Oct	17	Uncertainty in regression parameters, use of residuals	337-357, 360-368	330-350, 353-361	
27-Oct	18	Pitfalls in regression, serial correlation			245-256
1-Nov	19	Functional analysis and reduced major axis	377-389, 395-398	371-380	
		<u>Multiple regression</u>			
3-Nov	20	Confounding variables and multiple regression	413-428	407-422	307-315
8-Nov	21	Multiple regression: significance tests and diagnostics	429-443	423-437	
10-Nov	22	Multicollinearity			316-332
14-Nov	23	"Dummy" variables and analysis of covariance			333-353
		<u>Advanced topics</u>			
17-Nov	24	Outliers, Censored data			
22-Nov	25	Sampling design			
24-Nov		No class (home study in digestive physiology and family psycho-dynamics)			
29-Nov	26	Testing distributions, testing for randomness	461-483, 571-578	471-479, 569-576	
1-Dec	27	Bayesian inference			
6-Dec	28	TBA			
8-Dec	29	TBA			

Schedule of lectures and readings is tentative and subject to change, since some topics may go more quickly or slowly than expected.

\*\*In addition to the specified reading, you should also have scanned (for familiarity, not detailed mastery) chapters 3 and 4 of JMP Start Statistics before the second lab period.