Overview Introduction to Geostatistics, summer semester 2010

Date	topic	W&W	exercises
Apr 13	Introduction to spatial data: their collection, storage, and analysis; examples. The R environment and why we use it.	Ch 1	1
Apr 20	Types of variables: nominal, ordinal, interval, ratio; examples. Descriptive statistics I: measures of central tendency (mode, median, mean), quantiles, fractions, measures of spread (range, inter quartile range, variance, standard deviation)	26-39	2
Apr 27	Descriptive statistics II: plots and maps. Bar chart, Pie chart, Histograms, Cumulative frequency plot. Bivariate plots: Box-and-Whisker plot, Scatter plot, time plots, dot maps. Trivariate plots: symbol maps, level maps.	39-64	3
May 4	Probability I. What is probability; what is an event. Conditional probability, Independence.	70-103	4
May 11	Probability II. Random variables and probability distributions. Discrete distributions: binomial, Poisson; continuous distributions: normal. Expectation; variance, covariance.	110-141, 164-170	5
May 18	Sampling: Surveys and field work, simple random sampling, stratified sampling, optimal allocation, clustered sampling. Point estimation: Standard error vs. standard deviation, Confidence intervals I.	190-215, 232-239, 254-261	6
May 25	Confidence intervals II: confidence intervals for differences, and in general.	261-281	7
June 9.	Formal testing. One-sample tests; two-sample tests; difference in means; difference in proportions. p-values, significance, Type-I errors.	265-277, 287-310	8
June 15	Two-sample T-test and analysis of variance. Power and Type-II errors.	265-277, 325-336	9
June 22	Correlation and regression.	475-482, 358-366	10
June 29	Multiple regression and regression extensions: generalized linear models, regression with correlated errors.	372-406	11
Jul 6	Multivariate statistics: Principal components, Cluster analysis, Discriminant analysis; narrow-sense geostatistics.	follows	12
Jul 13	Overview/repetition/questions	-	13
Jul 20	Final Test, 10:00-12:00.		