Biomathematics 170A – class outline & schedule
Fall, 2012 – Lecture Monday, Wednesday 2:00-3:30 pm, 17-187 CHS
Discussion – Wed 4:00-4:50 pm LS 5230 (tentative)
Web site (Moodle): http://ccle.ucla.edu/course/view/10F-BIOMATH170A-1

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Moye L, Statistical Reasoning in Medicine, Springer, 2000
Grading: Assignments & final exam. Schedule below is subject to change

Week Topic (all times are approximate)

1 Study design (Petrie & Sabin section 12-16)
Notes Sec I Experiment vs observational, confounding & bias, clinical trial designs

2 Descriptive statistics (Petrie & Sabin section 4-9, section 31)
Notes Continuous data summaries, survival curve (simple case)
Sec II Binary data-Risk ratio, risk difference, odds ratio, hazard rate, Number needed to treat (NNT), sensitivity, specificity, ROC curve

3 Probability distributions: Gaussian, Binomial, Poisson
Notes (Petrie & Sabin, sections, 7,8 & 10)
Sec III Sampling distribution & Gaussian theory, elementary probability Transformations and outliers (Petrie & Sabin, Sec 9)

4-6 Confidence intervals, hypothesis testing, power, sample size
(Petrie & Sabin sections 11,17,18,21)
Notes Confidence intervals
Sec IV, V Power and sample size (Petrie & Sabin sec 36) Planning a clinical trial- accrual and dropouts

7 Linear Regression –an introduction (Petrie & Sabin sec 26-29)
Notes Basic bivariate linear regression & prediction, Measures of fit & error
Sec VI Overview of multiple linear & logistic regression

8 Comparing groups:t tests, one way analysis of variance & chi-square
Notes Comparing means & analysis of variance (P & S, sec 20-22), effect code
Sec VII & VIII Comparing proportions – chi-square & Fisher (P & S, sec 24-25)

9 Non parametric hypothesis testing – (Petrie & Sabin, sec 19, 20, 21)
Notes When Gaussian theory is not appropriate
Sec IX Statistical Reporting in Scientific Papers (slides only)

10 Wrap up and review, Final exam

Attendance restricted to MDs in the MS in clinical research program or the K30 program.