

STAT 100 students:

I received 47 responses to my request for indications about what topics you would like to see reviewed and clarified. The most frequent requests were for :

Concepts:

- Uniform Spatial Scatter (17)
- Density Curve (15)
- Clusters (12)
- Covariate (11)
- Sample Means Distribution (10)

Contexts:

- Ocotillo (30)
- Six Sigma (18)
- Insurance (12)
- Traveling Salesman (10)
- Investment Portfolio (9)

Techniques:

- Square Root Law (23)
- Regression & Regression Line (22)
- Central Limit Theorem (19)
- Logarithms (15)
- Time Series, SD of Means, Gamma Distribution, Poisson Dist., (14 each)
- Decision Errors (13), Random Sampling With and Without Replacement (13)

After looking at these and the less chosen topics as well, I found there were roughly eight clusters of topics which I will review in the lectures ahead (the counts refer to the total choices of all the responding students on all the topics that belong in the group of topics.):

1. (Sample Means - 115 choices) I will review the theory and application of the distribution of sample means, including the direct implications for the investment portfolio and insurance applications.
2. (Spatial Distributions - 85 choices) This recent material needs some repetition including the discussion of plant clusters, cell counts, the traveling salesman problem, and path length problems.
3. (Time Series - 67 choices) Several topics fit here: random walks, the stock market, smoothing, simulation, forecasting time series, and a few others.

4. (Regression - 64 choices) Regression and regression lines, residual plots, correlation, covariates, data mining, and weather forecasting.
5. (Probability Models - 59 choices) Normal, Poisson, and Gamma Distribution Models, Density, Variability, Models, and application to Sports Leagues.
- 5A. (Inserted April 7 – I missed this on the initial listing)
(Industrial Issues – 37 choices) Six Sigma, Quality Control, Variability Reduction, Reliability, Cell Phone Fraud.
6. (Smoothing - 31 choices) Moving Averages, Fuel Consumption, Survival Data, and Zipf's Law.
7. (Experiments and Observational Studies - 29 choices): Random assignment, randomization, Simpson's Paradox, and applications School Choice, Turkey Mail, Memory Load, Clinical Trials, and one I forgot to list - Gilbert Murder Case.
8. (Sampling Surveys - 17 choices): Political Opinion Polls, HIV study, Randomized Response, Veteran's Fund Raising, and Tiger Prey.
9. (Miscellaneous - 85 choices): Various details including Decision Errors, Sampling with and without replacement, SD or proportions,

I will try to go through all these topics in the order above. We have 6 lecture hours to do it, and I will try to go as slowly as necessary to make sure everyone who has made an effort to understand can do so.