

HS 267 pre-requisite knowledge

It is important that you come into Computational Public Health Statistics (HS 267) with a base of knowledge in several elementary areas of statistics. These areas are:

- ☑ Measurement scales: quantitative, ordinal, categorical
- ☑ Data table structure: variable, value, observation
- ☑ Statistical software use: variable creation, data entry, basic use of analytic functions and menus [We use SPSS, but a base knowledge in any general statistical package is transferable and acceptable.]
- ☑ EDA and data description: stemplot; frequencies and proportions; histograms, bar charts; mean, median, standard deviation, quartiles; (Tukey boxplot recommended)
- ☑ Probability basics—basic rules of probability; binomial distributions; Normal distributions; Standard Normal table
- ☑ Inference basics: sampling distribution of mean; standard error; confidence interval basics; hypothesis testing basics
- ☑ One-sample, paired-sample, two-sample inference about μ (t procedures)

It is assumed that you will have a functional knowledge in these areas in order to perform at a satisfactory level in HS 267. Knowledge in these areas can be fortified and assessed by completing the tutorial posted on the www.sjsu.edu/biostat website (click on the link that says [Preparation for the SJSU distance MPH statistics course](#)). If you perform poorly in the self-assessments as you complete this tutorial site, it is recommended that you take an elementary statistical course at a community college or online in preparation for HS 267*.

A note on learning and memory

Facts and concepts, whatever the topic, must be committed to memory. Memory is needed “equally to all sorts of learning-- from memorizing new vocabulary words, to reading novel so as to prepare for a class discussion...to conducting a chemistry lab in the morning in order to compare the outcome with examples in a problem set to be handed out that afternoon.”[†] Important cognitive principles that apply to improving memory from [Willingham \(2008\)](#)* are shown to the right.

1. Memories are formed as a residue of thought. If you want to remember what things mean, you must select a mental task that will ensure that you think about their meaning.

2. Memories are lost mostly due to missing or ambiguous cues. Make your memories distinctive. Distribute your studying over time. Plan for forgetting by continuing to study even after you know the material.

3. Individuals’ assessments of their own knowledge are fallible. Don’t use internal feelings to gauge whether you have studied enough. Test yourself, and do so using the same type of test you’ll use in class.

* See, for instance, <http://extension.ucsd.edu/>.

[†] Willingham, D. T. (2008). What will improve a student's memory? *American Educator*, 32(4), 17-25.