***1st Semester Final Exam Topics***

*Key terms*: categorical/qualitative data, quantitative data, descriptive statistics, lurking variable, histogram, bar graph, pie chart, frequency, cumulative frequency, relative frequency, class limits vs class boundaries, parameter, statistic, observational study, survey, experiment, simple random sample, stratified sample, completely randomized experimental design, block design, mean, median, variance, standard deviation, quartiles/interquartile range, probability, permutation, combination, binomial probability, normal curve, standard normal curve, Central Limit Theorem, sampling distribution.

I do not expect you to be able to define these formally, but I do expect that you’ll know what the terms mean and be able to describe the concepts and calculate values.

*Concepts to know*: calculate a standard deviation if given data and the formula, complete an appropriate graph of data given a frequency distribution, be able to create a Venn Diagram given probability information (and determine probabilities based on the Venn Diagram), know whether a situation calls for the calculation of a permutation or a combination and perform the correct calculation, perform calculations related to binomial probabilities (using the formula or a normal approximation, as appropriate), perform calculations related to the normal curve.

*Formulas*: I will not provide you with any formulas. I expect that you will know the formulas, as we haven’t had very many! Just for starters, based on the information above you might consider memorizing formulas for:

* Mean/median/range/interquartile range
* Relative and cumulative frequency
* Combinations and permutations
* Binomial probability (discrete ***or*** normal approximation with continuity correction)
* Z-score (population, sampling distribution, normal approximation to a binomial)