

LING82100: midterm study guide

The midterm will be a one-week take-home exam. You are not permitted to work with others.

- Given a description of an study, say
 - whether it is a *true experiment*, a *quasi-experimental study*, or an *observational study*;
 - which variables are *dependent variables* (or *outcomes*) and which are *independent variables* (or *predictors*);
 - whether the study uses a *within-subjects* or *between-subjects* design.
- Given a measure, say
 - whether it is *categorical*, *ordinal*, *interval*, or *ratio*;
 - what statistics (e.g., *mode*, *median*, *mean*, and *standard deviation*) are appropriate.
- Given a sample mean (\bar{X}), standard deviation (s), and size n , compute
 - the *standard error*, and
 - the 95% confidence interval.
- Given a p -value and an α -level, say whether the effect is significant or not.
- Say whether a scenario is Type I error or Type II error (or no error).
- State the relationship between α -level, effect size, sample size, power, and Types I and II error (e.g., what is the effect of increasing the α -level?).
- State ways one can increase the power of an experiment.
- Given a data set, be able to apply and **fully report** the results of the appropriate test from the following list:
 - the binomial test,
 - the t -test (including the one sample, paired sample, and two sample case),
 - the Wilcoxon test (including the one sample, paired sample, and two sample cases),
 - the Fisher exact test,
 - the Pearson r test,
 - the Spearman ρ test, and
 - the Kendall τ_b test.