How to Review for Midterm

- Review the lectures and textbook chapters
- Work out all examples from the slides presented in class and some from textbook
- Review all homework problems

Variables

- *Variable* means that any particular characteristic may “vary” among the units in a population. It is a characteristic that varies from one observation to the next and can be measured or categorized.
- *Independent variable* – independent of any effects of other variables.
- *Dependent variable* – the variable you are really interested in measuring; it depends on the level or presence or amount of some other variable.

Types of Variables According to Scale of Measurement

Scale	Description	Example	Statistics	Graphs
Nominal	Qualitative observations or Categorical observations	gender, race, marital status, education status, exposure status (yes/no), disease status (yes/no)	Frequency, Relative Frequency	Contingency tables Bar chart
Ordinal	Qualitative observations or Categorical observations	Preference rating (good, better, best) Rank-order scale	Frequency, Relative Frequency	Bar chart
Numerical	Quantitative observations. Two types: Continuous (interval-values on a continuum) and Discrete scales (values equal to integers)	Dose of ionizing radiation Temperature Age and Number of fractures Number of children	Geometric mean Arithmetic mean Median/Mode Range Variance Standard deviation Coefficient of variation	Histogram or frequency polygon Box plot Bar chart Stem-and-Leaf plot

Statistical Tests

	Dependent Variable
Independent Variable	**Continuous, normally distributed**
Continuous, normally distributed	Pearson correlation coefficient (t test) Linear regression (t test, F test)
Nominal with more than 2 categories	Analysis of variance (F test)
Nominal with 2 categories	Comparison of means (t-test)