Study Guide for Exam 3
Below is a list of terms/concepts that you should be familiar with for Exam 3 on Tuesday 11/14/2017. **This list is not exhaustive.** You should be familiar with your lecture notes and the assigned readings. Some tips: Study hard – go over the notes carefully (most of the questions will be drawn from lecture material) and be familiar with all readings. Study smart – know key concepts. Get a good night's sleep before the exam. <mark>**Highlighted = added**</mark>

Intro to ISS 305 <mark>(1 Question on the Exam)</mark>
- Candide, <u>S</u>keptic, skeptic

Problems of Description <mark>(10 Questions on the Exam)</mark>
- Slippery "Averages" – What would Huff tell you to ask?
- Normal Distribution and it's features
- Proportions or Percentages – problems?
- Graphical Illusions/Deceptions

Establishing Associations <mark>(24 Questions on the Exam)</mark>
- Defining relationships – Why is bivariate description more interesting?
    - Positive, negative, and absence/no relationship; prediction
- Contingency tables – What do a, b, c, d, e, f, g, h, and N represent?
    - Can you draw one if given the variables?
- Frequency distributions vs. **Relative frequency distributions (rfd)**
    - Row rfd's vs. column rfd's – How do you establish a relationship with the rfd's?
    - Judging relationships from contingency tables
    - What information do you need in order to draw valid conclusions?
- What is a perfect relationship? The most common errors in judging relationships?
- Causal relationships
- Single-cell errors
    - Trying to <u>prove</u> a rule with single cell information, usually use
        - Positive testimonials; a bunch of positive testimonials
        - "Person on the street" interviews
        - Reasoning from one's own experience
        - Case studies
    - Trying to <u>disprove</u> a rule with single cell information, usually use
        - Negative testimonials; a bunch of negative testimonials
        - "Person who"
        - Historical counterexamples
    - Why do we commit single cell errors? What are the roots?
        - What about exceptions?
    - Factors that affect making the single cell error (heuristic)
        - Vivid vs. pallid information – for example, the prison guard study
        - Stereotypes; Illusory correlations/paired distinctiveness
        - Personal evidence
        - Confirmation bias, framing, and profit
        - Individual differences
- Single Row/column errors (no control group error) and the roots of them
    - Factors that affect making the single row/column errors
        - Restriction of range / floor effects / ceiling effects
        - Individual differences
- Diagonal and marginals errors and the origins of each

- How do our expectations shape detecting relationships? When we expect $|r| > 0$, or $r = 0$?
- C x C, using a scatter plot, and restriction of range
  - What does $r = 0$ mean?
- **For practice judging relationships from word problems, see "Recognizing Relationships" inside the "Establishing Associations" notes section on D2L**

Real vs. Illusory Effects (15 Questions on the Exam)
- Probabilistically
- Chance and coincidence
- Prevalence of uncertainty
  - What do we mean when we say something was due to chance?
- Representativeness heuristic
- Underutilization of base rate information
- Perception of random and chance events
  - Falling victim to the
    - Representativeness heuristic
    - Gambler's fallacy
- Illusions of control – what's this whole thing about tickets and the card game war?
- The conjunction fallacy – what's an example?
- Inverse probabilities
- Belief in a just world
  - Good people deserve what?
  - Bad people deserve what?
    - Why?
  - What are some examples?
  - Zuckerman (1975) study
- Insensitivity to sample size
  - Why do we make this mistake?
  - Why is it bad when we evaluate relationships?
- Hypothesis testing
  - Core logic
  - Null (H_o) – what is it saying?
  - Alternate (H_1 or H_a) – what is it saying?
  - Generic procedures
  - Alpha (α) levels
  - Sample size
  - What happens if your IV is significant? Not significant?
- Type I and II error (decision errors)
  - How can each be influenced?
  - What happens if I want to avoid making one of these errors?
  - Contingency table outcomes of each
- Practical vs. statistical significance – When would you favor one over the other?
  - How is effect size tied into this debate?
  - What is a meta-analysis? What are the potential problems?