CIRP 5395 - Quantitative Research Methods

Fall 2015 – Fridays, 2 pm-4:50 pm

Instructor: Dr. Shima Hamidi

The course starts at the beginning, with descriptive statistics and simple inferential statistics such as chi-square tests, and proceeds to the most sophisticated statistics being used by planners today, multi-level modeling, structural equation modeling, and spatial econometrics. Two-thirds of the class time is spent working with real data sets (not contrived for class) and excellent statistical software packages. We engage in what is sometimes called parallel play, where I project my screen and you follow my lead. Our mainstay is the most user-friendly of the common statistical packages, SPSS. However, as SPSS is limited, we will also work with the amazing programs HLM, AMOS, and R.

We have no assigned text. Instead, we will rely on my lectures, your lectures, guest lectures, and class exercises. If you want to buy a book, I would suggest *Statistics for People Who (Think They) Hate Statistics*. It is very basic and easy to read. If you want a seminal book, buy Econometric Analysis by Bill Greene, whom I contract with for statistic consulting services. There must be many tens of thousands of books on the subject, so there is no shortage of guidance. However, oddly, there is no good textbook for planners, which is why we are writing one ourselves as part of this course. Each of you will be responsible for writing one chapter of our co-authored book, and for making one class presentations.

This is an extremely informal class. The class size makes it possible to be totally interactive.

Aug. 28 – Introduction to Quantitative Research Methods; Concepts and Definitions

Sept. 4 - Descriptive Statistics and Correlations

Sept. 11 – Chi Square and Difference of Means

Sept. 18 – ANOVA; Validity and Reliability

Sept. 25 - Linear Regression

Oct. 2 – Logistic Regression

Oct. 9 – Poisson and Negative Binomial Regression

Oct. 16 - Factor Analysis and Principal Component Analysis; Cluster Analysis

Oct. 23 – Correlation vs. Causation; Cross-sectional and Longitudinal Analysis; Meta-analysis (ACSP conference –we might need to postpone this class)

Oct. 30 - Multi-Level Modeling

Nov. 6 - Structural Equation Modeling

Nov. 13 - Spatial Econometrics (1)

Nov. 20 – Spatial Econometrics (2)

Nov. 27 – Thanksgiving Holidays- No Class

Dec. 4 –Review and application of methods