Sociology 271B – Methods of Sociological Research: Introduction to Statistics
Fall 2013
Tuesdays and Thursdays, 12noon-2pm, 402 Barrows Hall

Professor Samuel R. Lucas
Office: 438 Barrows Hall
Phone: 642-4765 or 642-4766
E-mail address: lucas@demog.berkeley.edu
home-page: http://www.samuelroundfieldlucas.com
Office hours: Thursdays 10am-12noon **(but check my web-site for updates)**

This course serves as an introduction to statistics for sociological research. We will introduce basic probability theory, and then consider important concepts such as central tendency, variation, sample, population, estimator, and more that can form the building blocks to systematic inquiry.

This course has several aims. First, and most basically, one should be prepared to enter the next course in the sequence, Sociology 271C, Methods of Sociological Research: Applied Regression. More centrally, although this is a statistics course, the foundational concepts covered are relevant to the vast majority of research in sociology and the other social sciences. Thus, by establishing the logic on which those concepts are based, we should helpfully position each course participant to effectively pursue and critique both statistical and non-statistical approaches to research.

Reading, Assignments, and Grading
You have been informed via e-mail how to obtain the text for this course, which is:

Wonnacott, Thomas J., and Ronald J. Wonnacott. 1990. *Introductory Statistics, fifth edition.* Hoboken, NJ: John Wiley & Sons.

Two types of assignments have been devised to facilitate learning in the course–problem sets and examinations. Problem sets will generally be assigned weekly and will be due at the start of the first class session of the following week. Late work (even late by a "teensy-weensy bit") will not be accepted. Two mid-terms and a final exam are scheduled.

Each problem set counts 5% (total=60%); each mid-term counts 10% (total=20%), and the final counts 15%. A participation grade counting 5%, and dependent on attendance and engagement, will also be allocated. No incompletes will be given in this class. Students are further advised to avoid making travel plans that may conflict with attendance, exams, or other requirements.

Schedule of Readings and Assignments

Week 1, August 29 – Introduction
Reading: Wonnacott and Wonnacott (W&W) Chapter 1
Homework: Problem set exercises will be announced, due Sep 5

Week 2, September 3-5 – Descriptive Statistics
Reading: W&W, Chapter 2
Homework: Problem set exercises will be announced, due Sep 10

Week 3, September 10-12 – Probability
Reading: W&W, Chapter 3
Homework: Problem set exercises will be announced, due Sep 17

Week 4, September 17-19 – Probability Distributions
Reading: W&W, Chapter 4
Homework: Problem set exercises will be announced, due Sep 24

Week 5, September 24-26 – Two Random Variables
Reading: W&W, Chapter 5
Homework: Problem set exercises will be announced, due Oct 1

Week 6, Oct 1-3 – Sampling
Reading: W&W, Chapter 6
Homework: Problem set exercises will be announced, due Oct 8

Week 7, October 10 – Mid-Term #1, on material covered through end of W&W Chapter 5

Week 8, October 15-17 – Point Estimation
Reading: W&W, Chapter 7
Homework: Problem set exercises will be announced, due Oct 22

Week 9, October 22-24 – Confidence Intervals
Reading: W&W, Chapter 8
Homework: Problem set exercises will be announced, due Oct 29

Week 10, October 29-31 – Hypothesis Testing & ANOVA
Reading: W&W, Chapters 9-10
Homework: Problem set exercises will be announced, due Nov 5

Week 11, Nov 5-7 – Introduction to Simple Regression
Reading: W&W, Chapters 11-12
Homework: Problem set exercises will be announced, due Nov 12

Week 12, November 14 – Mid-Term Exam # 2, covering material through Oct 31

Week 13, November 19-21 – Introduction to Multiple Regression
Reading: W&W, Chapters 13 and 15
Homework: Problem set exercises will be announced, due Nov 26

Week 14, November 26 – Extensions of Regression
Reading: W&W, Chapter 14
Homework: Problem set exercises will be announced, due Dec 3

Week 15, December 3-5 – Maximum Likelihood Estimation and Bayesian Inference
Reading: W&W, Chapter 18-20

Week 16, December 10 – Wrap-up

Week 17, December 17 – Final Exam