Instructor:
Nancy Brandon Tuma, 228 McClatchy Hall, tuma@stanford.edu
Office Hours: Thursdays 2:00-3:30pm, or by appointment

TA:
Elizabeth McClintock, 230 McClatchy Hall, 650-724-6961, emcclint@stanford.edu
Office Hours: Tuesdays & Fridays, 2:30-3:30pm, or by appointment

Main Texts:
Tuma, Nancy Brandon. Lecture Notes.

Other Recommended Texts on Statistics or Statistical Analysis:

Useful References on Writing:

Course Format:
The course has three main parts. The first part will review fundamentals of social research and mathematical and statistical concepts and notation. The second part will review linear models for continuous (metric) outcomes. This part of the course presumes some previous familiarity with linear models. The third part will introduce static models for discrete outcomes. Occasionally students have constraints on the number of units for which they can enroll but
want to participate in the whole course. If this applies to you, please see me about how to handle this problem.

Typically two class meetings per week (usually Monday and Wednesday) will be lectures, and the third class (usually Friday) will be a TA session. TA sessions will be used for review, answering students’ questions, and discussing students’ assignments. There will be occasional short, unannounced quizzes, which may be given at the start of any class.

January 16 and February 20 (both on a Monday) are university holidays; no class those days.

**Students with Documented Disabilities:**

Any student with a physical or mental impairment that may necessitate an academic accommodation or the use of auxiliary aids and services in a class must initiate the request with the Student Disability Resource Center (SDRC), located at 563 Salvatierra Walk (phone 723-1066; TTY 723-1067). The SDRC will evaluate the request with the required documentation, recommend appropriate accommodations, and prepare a verification letter dated in the current academic term in which the request is made. Please contact the SDRC as soon as possible; timely notice is needed to arrange for appropriate accommodations. For further information, see the SDRC website at http://www.stanford.edu/group/DRC/

**Course Requirements:**

Grades in the course will be based on the following:

- **60%** several written assignments, including a final paper
- **20%** occasional unannounced in-class quizzes (lowest will be dropped)
- **20%** in-class final exam (given at the regularly scheduled time for the final exam)

The Sociology department requires its doctoral students to take this course for a letter grade; other students are welcome to take this course on a pass/no credit basis.

The written assignments will require you to design and implement a piece of empirical research of interest to you in which it is appropriate to use certain models and methods covered in this course. The models include both linear regression models and regression models for dichotomous outcomes. You are free to choose the substantive social scientific topic and data set for this paper. The topic and data set may be linked to work you have done or are doing in another course or for some other purpose. The main requirements in terms of your topic and data set are that the models and methods covered in this course should be appropriate for your topic and data set and that the work you do for this course is solely your work and undertaken during this quarter (i.e., not work that you did previously for some other purpose). An appropriate data set needs to have a large enough sample size that the methods you apply can give sensible, meaningful results.

All written assignments are due at the start of class on their due dates. The final paper is due at the start of the last class on Friday, March 17. Any late assignment will be marked down to the next lower grade (e.g., A to A-, A- to B+, and so on) for each day (part or full) that it is late. No incomplete grades in the course will be given.

**Stanford Honor Code:** It applies to all assignments; see http://honorcode.stanford.edu
Topics and Main Readings

The basic order of topics and readings is given below. Occasional digressions will occur when a change of pace or topic seems useful. There will be digressions on how to present tables, figures, and other empirical findings, as well as on how to write a paper giving empirical results. The following readings are relevant to these digressions:

Tuma: Lecture Notes on “Writing a Paper Using Statistical Analysis of Data.”

1. Basic Concepts in Social Research; Statistical Concepts & Notation (Jan. 11 - 20)
Hamilton: Chapter 1 and Appendices 1 & 3
Tuma: Miscellaneous Lectures Notes.

2. Linear Models (Jan. 23 - Feb. 24)
Hamilton: Chapters 2 - 5
Long: Chapter 2
Tuma: Lectures Notes on “Coding Variables in Regression Models”
Tuma: Miscellaneous Other Lectures Notes.

3. Models for Binary Outcomes (Feb. 27 - Mar. 10)
Hamilton: Chapter 7
Long: Chapter 3
Tuma: Lecture Notes on “Models for Discrete Outcomes”

4. Robust Regression (Mar. 13 - 15)
Hamilton: Chapter 6