

Sociology 680
Advanced Quantitative Methods
Fall 2010

Course Syllabus

<http://www.csun.edu/~vcsoc00i/classes/s680f10/homepage.htm>

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You are enrolled in Sociology 680, Advanced Qualitative Methods, which meets on Mondays from 6:00 to 8:45 pm in Sierra Hall 180 during the Fall 2010, starting August 23rd. This is a newly re-invented course in the graduate department of Sociology based on the premise that graduate students who are intending to continue on in research, either for the M.A. thesis or future Ph.D. preparation, need a foundation in advanced multivariate models and techniques to conduct basic research. Accordingly, this course involves a once a week three hour lecture, encompassing one-midterm, a take home final and a course paper, each of equal weight in grading. More importantly it seeks to accomplish three learning outcomes: the first is an appreciation of the overall framework of statistics in the pursuit of research findings and publication, including the role of descriptive vs. inferential models in multivariate analysis; the second is the more specific application of multivariate statistical modeling, based upon levels of measurement generated in the independent vs. dependent variable; the third is the mastery of a program facilitating such analysis, in this case the Statistical Package for the Social Sciences. In a larger sense, however, this course seeks to establish a methodology for critical thinking in engaging and processing the myriad of data likely to be found in social science research.

Frequently Asked Questions Concerning This Class

Textbooks: The required text is *Advanced and Multivariate Statistical Methods, Practical Applications and Interpretation* by Graig A. Mertler and Rachel A. Vannatta; Pyrczak Publications. In addition, *Discovering Statistics Using SPSS, 3rd Edition* by Andy Field is recommended, but not required. Do not purchase this second book, however, until after the first day of class, allowing us to have had the opportunity to discuss possible cost cutting measures.

Grading: The class will consist of lecture/discussion (real time and virtual) and readings, an in class midterm, a take home cumulative final and a presentation paper. Participation in each of these four venues will be weighted 25% of the total grade. Hence, your score of 50 points each, for a total of 200 points, will comprise your class grade. Plus/minus grading will be used.

Communication: In addition to real time class attendance, a variety of virtual techniques will be implemented. As part of our communication, you will be utilizing the Internet, email, blogging and chat to facilitate interaction during the course of the semester and to supplement the hours not formally held in the class. Some programs are unique to campus and are best used by installing VPN on your home or laptop computer. As well, you may follow events on both the class website: www.csun.edu/~vcsoc00i/classes/s680f10/announce.htm and on twitter at twitter.com/s680f10.

Office hours: Office hours will be held in real time, Thursday 6:00 pm and each Monday night immediately after class; otherwise by appointment. For those unable to meet in person, we can hold discussions via telephone and mIRC (chat). If several of you wish to form a study group, we can arrange routine alternative meeting times to review material.

Classroom Expectations: You are expected to attend each Monday session. The dates on the attached calendar, contained herein, are immutable. That is, test dates will not change. Therefore, plan your social calendar accordingly. While I will attempt to ensure that no full Monday class will be cancelled, expect that at least one day may involve my being out of town. If that occurs, I will provide for an alternative session, via Elluminate. In any event, this timing will be articulated well in advance and will not affect any test dates.

Study Habits: This class is a graduate class. Therefore, you need to identify with it accordingly. This will necessitate planning for study time of at least 10-15 hours per week. As well, it will require pro-activity in applying these hours. Read the materials in advance of the lecture, review on a regular basis and establish cohorts with whom you can communicate and study. Come to class well rested and ready to ask questions.

Sociology 680 – Course Outline

Week One	Aug 23	<u>Introduction / Orientation:</u> Discussion of the goals/mutual expectations/logistics/SPSS/grading/participation of the class. Readings: Mertler, Chapter 1 / Field – Chapter 1 & 3
Week Two	Aug 30	<u>A Guide to Statistics & Multivariate Techniques:</u> Review of general statistics, algebra and calculus in multivariate thinking. Readings: Mertler, Chapter 2 & 3 / Field Chapter 2 & 4
Week Three	Sept 13	<u>Models of Association – Simple Correlation and Regression:</u> Review of bi-variate correlation/regression and partial analysis Readings: Field Chapter 6 & 7
Week Four	Sept 20	<u>Measures of Association – SEM and Path Analysis</u> Review of partial association and temporal modeling Readings: Mertler, Chapter 7 & 8
Week Five	Sept 27	<u>Models of Association – Factor Analysis:</u> Review of latent, structure, shared variation and factor loading methodology. Readings: Mertler, Chapter 9 / Field Chapter 17
Week Six	Oct 04	<u>Models of Association – Cluster Analysis</u> Review of non-quantitative version of latent/factor analysis Readings: Handout
Week Seven	Oct 11	<u>Models of Association – Discriminant Analysis</u> Review of technique used to classify groups via multi-measures Readings: Mertler, Chapter 10
Week Eight	Oct 18	<u>Models of Association – Logistic Regression</u> Review of Predictive models where DV is non-quantitative. Readings: Mertler, Chapter 11 / Field, Chapter 8.
Week Nine	Oct 25	<u>Midterm Examination:</u> An essay exam incorporating M.A. style comp questions. In house, three hours.

Week Ten	Nov 01	<u>Measures of Difference: t-tests and Analysis of Variance</u> Review of simple test of significance using single IV. Readings: Fields, Chapter 9 & 10.
Week Eleven	Nov 08	<u>Measures of Differences: Factorial Analysis of Variance</u> Review of tests of differences involving multiple IV. Readings: Mertler, Chapter 4 / Field, Chapter 12
Week Twelve	Nov 15	<u>Measures of Differences: Analysis of Covariance</u> Review of tests of differences involving correlated DV variables. Readings: Mertler, Chapter 5 / Field, Chapter 11
Week Thirteen	Nov 22	<u>Measures of Differences: Multivariate Analysis of Variance</u> Review of tests of differences involving multiple DV variables. Readings: Mertler, Chapter 6 / Field, Chapter 16
Week Fourteen	Dec 05	<u>Presentation of Papers:</u> Based upon individuals choosing a data set and analysing such data through a technique discussed in class.
Week Fifteen	Dec 13	<u>Final Examination:</u> Take home exam given out one week prior to the final. Based on correctly identifying analyses done with specific data and specific techniques