SYLLABUS

COURSE NUMBER: SurvMeth 988.202 (3 credit hours)

COURSE TITLE: *MULTI-LEVEL ANALYSIS OF SURVEY DATA*

CREDITS: 3 credit hours

PREREQUISITES: At least one graduate-level course in statistics or quantitative methods, and experience with multivariate regression models, including both analysis of data and interpretation of results. School of Education students must have successfully completed ED-795 or equivalent. If you cannot meet this criterion, you must speak directly to the instructor prior to being given permission to enroll.

PURPOSE:

Although many surveys gather data on multiple units of analysis, most statistical procedures cannot make full use of these data and their nested structures: for example, individuals nested within groups, measures nested within individuals, and other nesting levels that may be of analytic interest. In this course, students are introduced to an increasingly common statistical technique used to address both the methodological and conceptual challenges posed by nested data structures -- hierarchical linear modeling (HLM). The course demonstrates multiple uses of the HLM software, including growth-curve modeling, but the major focus is on the basic logic of multi-level models and the investigation of organizational effects on individual-level outcomes. The multi-level analysis skills taught in this course are equally applicable in many social science fields: sociology, public health, psychology, demography, political science, and in the general field of organizational theory. Typically the course enrolls students from all these fields. Students will learn to conceptualize, conduct, interpret, and write up their own multi-level analyses, as well as to understand relevant statistical and practical issues.

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LEARNING
OUTCOMES: Basics: Know and understand the basic assumptions and conditions for the use of hierarchical linear models. Differentiate the uses for and understand the different types of models. Applications: Understand the basic models. Be able to identify appropriate data structures for hierarchical linear modeling. Understand the appropriate use of each model for the various data structures. Apply, interpret, and verbally summarize the results from a hierarchical linear model computer analyses.

TEACHING
STRATEGIES: The course will include lectures and discussions. The course will also include independent reading assignments. Homework and a final project will be employed to provide empirical feedback on how well students are learning the material.

EVALUATION
METHODS: Final grading for the course will be based on the completion of four assignments consisting of exercises that will be assigned, collected and graded. These will be designed to provide practice and to help synthesize readings, class discussions, and lectures. Students are encouraged to discuss solutions to assignments, but the final write-ups for submission should be done independently.

*A point will be subtracted for each day that any assignment is late.

Grading scale:

A	93 to 100
A-	*90 to 92*
B+	*88 to 89*
B	*83 to 87*
B-	*80 to 82*
C	Below 80

1.   Raudenbush, S., & Bryk, A. (2002). Hierarchical Linear Models: Applications and Data Analysis Methods (2nd Edition). Sage Publications, Inc. (Required)

COURSE TOPICS

Date	Topic	Reading
July 3th	Introduction	Chapter 1
July 4th	**No Class**	
July 5th	The Basic Logic of HLM	Chapter 2
July 6th	Basic Examples/Intro to SPSS/HLM	Chapter 4
July 7th	Basic Examples/Intro to SPSS/HLM	Chapter 4
July 10th	Basic Examples/Intro to SPSS/HLM	Chapter 4
July 11th	Applications in Organizational Research	Chapter 5
July 12th	Applications in Organizational Research	Chapter 5
July 13th	Individual Change/Growth Models	Chapter 6
July 14th	Individual Change/Growth Models	Chapter 6
July 17th	Three Level Models	Chapter 8
July 18th	Assessing HLM	Chapter 9
July 19th	Application in MetaAnalysis	Chapter 7
July 20st	Hierarchical Generalized Linear Models	Chapter 10
July 21nd	Cross-Classified Random Effects	Chapter 12