

## **HIERARCHICAL LINEAR MODELS**

Sociology 613      Fall 2002  
Education 155.

Asst. Professor, Ken Hudson, 721 PLC  
Phone: 346-5752  
EMAIL: [ckhudson@darkwing.uoergeon.edu](mailto:ckhudson@darkwing.uoergeon.edu)  
Office Hours: 2-4 PM Friday, by appt.

### **COURSE DESCRIPTION**

This is an introductory course in the use and estimation of Hierarchical Linear Models. The course assumes a basic knowledge of OLS regression techniques and theory and some basic knowledge of regression models with limited and categorical dependent variables. The course will focus on the application of the basic HLM models developed by Bryk and Raudenbush.

Each class will be roughly organized in the following manner: (1) a discussion of Raudenbush and Bryk; (2) discussion of an example from the social science literature; (3) a discussion of the estimation procedure and code in SAS.

### **BOOKS AND READINGS**

Raudenbush, Stephen W., and Anthony Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. 2<sup>nd</sup> Edition. Sage.

Selected readings from the social science literature utilizing HLM will be assigned throughout the course.

An bibliography of supplementary readings on HLM applications and theory will be posted on Blackboard.

### **COURSE REQUIREMENTS**

#### *Exercises*

Each week I will provide the class with sample data and SAS code for implementing and HLM procedure. Students in the class are asked to attempt run the code and interpret the results.

#### *Research Paper*

Students are asked to write a brief research paper on any topic of their choosing using an HLM method.

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Course Schedule

October 1	B&R Chapter 1 B&R Chapter 2	Introduction The Logic of HLM
October 8	B&R Chapters 1 & 2 (Continued) B&R Chapter 3	Estimation Theory and Testing
October 15	B&R Chapter 4	ANOVA, Means as Outcomes, Random and Fixed Effects, Level Two Equations, Estimation of Group Intercepts and Slopes
October 22	B&R Chapter 5	Using HLM in Organizational Analysis
October 29	B&R Chapter 6	Change and Growth Models
Nov 5	B&R Chapter 6 (Continued) B&R Chapter 7	Meta Analysis
Nov 12	B&R Chapter 8	Three Level Models
Nov 19	B&R Chapter 9 B&R Chapter 10	Assessing Model Adequacy HGLM
Nov 26	B&R Chapter 11	HLM with Latent Variables
Dec 3	B&R Chapter 12	Cross Classified Random Effects
		Research Paper Due