

Sociology 902—Structural Equation Models

Classroom	707 Oldfather Hall
Lab	738 Oldfather Hall
Schedule	F: 2:00-4:30pm
Instructor	Jacob E. Cheadle
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Website	http://blackboard.unl.edu
Office Hours	T 11:30am-12:30pm By appointment Blackboard Discussion (be sure to subscribe)
Books	Acock 2013

1 About This Course

This course will introduce Structural Equation Modeling (SEM) with and without latent variables. It provides an overview of the statistical theory underlying SEM and practice with the Stata software package. Topics include path analysis, confirmatory factor analysis, incorporating multiple indicators and measurement error into structural models, alternative estimators for categorical and limited dependent variables, model identification, model fit assessment, growth curve modeling, and some teasers for more advanced topics. This course is intended for graduate students in sociology and related disciplines. The course assumes a thorough understanding of statistical inference, ordinary least-squares regression, and regression models with non-normal or discrete dependent variables (which may be taken concurrently). Computer assignments are a part of the course, so students should be familiar with Stata.

2 Course Readings

The one book for the course that you must purchase is:

1. Acock, Alan C. 2013. *Discovering Structural Equation Modeling Using Stata, Revised Edition*. Stata Press.
 - a. <http://www.stata.com/bookstore/discovering-structural-equation-modeling-using-stata/>
 - b. <http://www.amazon.com/Discovering-Structural-Equation-Modeling-Revised/dp/1597181390>

Additional course readings are available for download at the course website (<http://blackboard.unl.edu>) under “Course Documents.” If you need additional information on Stata, you may want to check out *A Gentle Introduction to Stata, Fourth Edition* also by Alan C. Acock or the lecture notes I have posted under “Course Documents”. There is also a great deal of information available online, and I am happy to help you get started (but we should be sure to begin early).

3 Calendar

	Date	Topic	Reading	Assignment Due Indicated
SECTION 1: THEORY				
1	1/15/16	Review	---	---
2	1/22/16	Matrix algebra	Gill 3, Nambodiri S1&2	---
3	1/29/16	Theory: Intro to SEM with observed variables	Bollen 1,2, 4	P1
4	2/5/16	Theory: Measurement error and measurement models	Bollen 5, 6	P2
5	2/12/16	Theory: CFA & full SEM	Bollen 7, 8	P3
SECTION 2: APPLICATION				
6	2/19/16	Application: CFA	Acock 1	---
7	2/26/16	Application: Path Models	Acock 2	H1
8	3/4/16	Application: SEM	Acock 3	H2
9	3/11/16	Application: Latent Growth Curve Models	Acock 4	H3
10	3/18/16	Application: Group Comparisons	Acock 5	H4
SECTION 3: LOOSE ENDS/ADVANCED				
11	3/25/16	SPRING BREAK	SPRING BREAK	SPRING BREAK
12	4/1/16	NO CLASS		
13	4/8/16	Generalized SEM	Stata SEM Manual	H5, P4
14	4/15/16	Topic Survey	Muthen 2008 Henry 2010 Muthen 2006	P5
15	4/22/16	Paper Discussions		P6
16	4/29/16	NO CLASS		
P7: FINAL PAPER DUE: 5/3/2015 @ 3PM				

4 Readings for the Course

Other than Acock, the readings are online and all reference materials are provided in those documents or are available upon request.

5 Lab & Software Access

All classes will first meet in 707 Oldfather Hall and we will migrate together to 738 as needed. Stata can be accessed through the Departmental Compute Server (Soc-Analyzer) via remote desktop. Remember, when you are done with a session to “log off” and not to simply close the remote desktop client.

There are also options available to you for purchasing your own Stata 14 license for the semester, or into perpetuity. Both Stata/IC or Stata/SC are fine for the course (MP is certainly not needed).

Purchasing: <http://www.stata.com/order/new/edu/gradplans/campus-gradplan/>

More info: <http://ssp.unl.edu/purchase-stata>

6 Assessment

Your final grade in this course will be based upon the following factors:

1. Paper Project Assignments, labeled P1-P6.
2. The Final Paper, labeled P7.
3. Homework Assignments, indicated H1-H5.

The point distribution is as follows:

Assignment	Pts	#	# pts
P1-P3	10	3	30
P4-P6	20	3	60
P7	100	1	100
H1-H5	20	5	100
Total			290

At the beginning of the semester, you have 0 points. Over the semester, you will have multiple opportunities to acquire points. The point-grade distribution is as follows:

Grade	Range	
	pt min	pt max
A	270	290
A-	261	270
B+	253	261
B	241	253
B-	232	241
C+	224	232
C	212	224
C-	203	212
D	<=	203

6.1 Assignments

Assignments (both Paper Project and Homework) are posted online at our classroom Blackboard site under “Assignments”. They will generally provide an upload link that you can use. All assignments are due on the day indicated above in the calendar at 2pm (the beginning of class), and we are all well-familiar at this point with the oh-so common refrain about late assignments. Since all assignments will be uploaded to Blackboard as Word documents (please download and review each assignment *well in advance*), the upload fields have timers and so have a closing date. Assignments won’t be excepted via email.

The paper assignments provide a series of steps to help you stay on-time for the creation of your paper, and to provide concrete goals in its development. Critically, and in the theme of this course, the final course paper will require a completed SEM analysis as a key component of it with publication-ready tables and figures, in addition to all of the other parts of a paper.

The homework assignments will provide guided SEM applications, just as one would expect from a course of this nature.

7 Disability Access

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

8 Academic Integrity

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. All students should act with personal integrity, respect other students’ dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic dishonesty includes cheating, fabrication or falsification of student work, plagiarism, complicity in academic dishonesty, misrepresentation to avoid academic work, and failure to properly report any information regarding academic dishonesty. Examples include copying or allowing others to copy solutions from unauthorized sources (such as other students, textbooks, or the Internet), unauthorized collaboration with others (including tutors, TAs, and helpdesk staff), and modifying or deleting the files of others. So please don’t do any of that ☹ Students caught breaking these rules will be referred to the Office of Student Judicial Affairs.