

Sociology 536: Quantitative Methods in Sociology II

Spring Semester 2004

Tuesday & Thursday, 12–1:30, 286–7 McNeil Bldg

Hans-Peter Kohler*

December 30, 2003

Course Description

Sociology 536 is a course in applied linear modeling. Emphasis is placed on the theory and practice of multiple regression and analysis of variance, with extensions to path analysis and other simultaneous equation methods. Some data manipulation will require the use of a statistical computer package, STATA; but the greater emphasis of the course will be on conceptualization and the ability to manipulate these new ideas both with and without access to statistical software.

Class Administration

- Instructor: **Hans-Peter Kohler**, 272 McNeil Bldg
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Email: hpkohler@pop.upenn.edu,
Homepage: <http://www.ssc.upenn.edu/~hpkohler>
- Office hours: Monday, 2–4 PM
- Teaching Assistant: **Simone Polillo**, *Email:* spolillo@ssc.upenn.edu
Office hours: TBA
- The course meets Tuesdays and Thursdays at 12–1:30 in 286–7 McNeil Bldg. Most classes will consist of lectures on the theory and application of multiple linear regression and related techniques. Several lectures will be also be devoted to the presentation of data and “real-life” examples of regression analyses in published analyses. The lectures are augmented by a weekly recitation (Thursday 2–3 and 4–5) taught by Simone Polillo that reviews and further explains lecture materials, discusses difficult homework problems, etc.
- A course website is available via the U Penn Blackboard system at <http://courseweb.library.upenn.edu>
- Blackboard will be used as a primary tool for electronic communication with students and for the distribution of additional course materials such as lecture notes, data, problem set solutions, etc. **Please** make sure on the Blackboard site that you are enrolled in the class and that your email address is correct!
- Course Requirements:
 - **Problem sets:** there will be several written assignments at irregular intervals throughout the semester. Most of these will cover substantive questions on the methods discussed in class and the application of these techniques to empirical datasets using STATA.
 - **Midterm exam** (in class, closed book): Thursday, February 26, 2004
 - **Final exam** (cumulative, closed book): Thursday, April 29, 2004, 8:30–10:30 (to be confirmed).
- Grade composition: problem sets (15%), midterm (30%), final exam (50%), class participation (5%).
- There are no classes on March 9 and March 11 (spring break)

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Course Materials

- McKee J. McClelland, *Multiple Regression and Causal Analysis*, Waveland Press
- Paul D. Allison, *Multiple Regression: A Primer*, Pine Forge Press

Both books are available through the UPenn Bookstore. In addition, *Lecture Notes* will be made available after each week through the Blackboard Website for this course.

Tentative Course Outline

Week	Lecture	Date	Topic (tentative)
1	1	Tue Jan 13, 2004	Introduction
1	2	Thu Jan 15, 2004	Bivariate regression algebra
2	3	Tue Jan 20, 2004	Bivariate regression theory
2	4	Thu Jan 22, 2004	
3	5	Tue Jan 27, 2004	Trivariate and multiple regression
3	6	Thu Jan 29, 2004	
4	7	Tue Feb 3, 2004	Statistical inference in multiple regression
4	8	Thu Feb 5, 2004	
5	9	Tue Feb 10, 2004	Interpretation of regression coefficients; regression and correlation;
5	10	Thu Feb 12, 2004	
6	11	Tue Feb 17, 2004	Multicollinearity; nonlinearity
6	12	Thu Feb 19, 2004	
7	13	Tue Feb 24, 2004	Midterm review
7	14	Thu Feb 26, 2004	Midterm
8	15	Tue Mar 2, 2004	
8	16	Thu Mar 4, 2004	
9	17	Tue Mar 16, 2004	Model building strategies; dummy variables; interaction terms
9	18	Thu Mar 18, 2004	
10	19	Tue Mar 23, 2004	Violations of assumptions; robust standard errors; missing data
10	20	Thu Mar 25, 2004	
11	21	Tue Mar 30, 2004	Path analysis
11	22	Thu Apr 1, 2004	
12	23	Tue Apr 6, 2004	Generalized least squares; fixed-effect and random-effect regression
12	24	Thu Apr 8, 2004	
13	25	Tue Apr 13, 2004	Simultaneous equations
13	26	Thu Apr 15, 2004	
14	27	Tue Apr 20, 2004	
14	28	Thu Apr 22, 2004	Review
		Thu Apr 29, 2004	Final Exam (8:30–10:30; date and time to be confirmed!)