



Sociology 361: Statistics for Sociologists II  
Fall 2018~ Professor Eric Grodsky  
Tuesdays & Thursdays ~ 2:30-3:45 ~ 6104 Sewell

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Office hours: W 9-10 (4454 Sewell), F 2-3 (461B Education Sciences) & by appointment.

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Office hours: M 3:30-5:30 & by appointment

Canvas URL: <https://canvas.wisc.edu/courses/117147>

Three credits

Instructional mode: face to face

Credit hours are met following the traditional [Carnegie definition](#)

### LEARNING OUTCOMES

- *Conduct Research and Analyze Data*
- *Critically Evaluate Published Research*
- *Communicate Skillfully*
- *Critical Thinking about Society and Social Processes*

### COURSE DESCRIPTION

This class is the second of three required course in quantitative methods for doctoral candidates in sociology. At the time you enroll in this course, I expect you to have a high degree of competence with basic statistics, including measures of central tendency and dispersion, basic analysis of variance and familiarity with bivariate regression. If you chose not to take 360 and are sketchy on any of this material you should reconsider taking this class.

The primary objective of this class is to help you achieve a deep understanding of ordinary least squares regression (OLS). This understanding will include the mechanics of OLS, assumptions of OLS and consequences of violating those assumptions, and facility with the quantitative and graphical diagnostic tools to evaluate a model's conformity to those assumptions. Just as important, I will help you become expert at presenting quantitative results in a substantively meaningful and accessible way. Finally, we will read several published papers using OLS regression in order to understand and critique the ways in which this tool is used in the field. Engaging in discussions around both substance and method will hopefully demystify the tools we employ and help all of you be smarter consumers and producers of social science.

### LABORATORY SESSIONS

Your TA is responsible for running lab. The purpose of labs are to:

1. Clarify concepts and procedures covered in lecture
2. Train students how to use Stata, the software we use to do statistical modeling in this class

Labs are scheduled:

M 9:55-11:50AM	3218 Sewell Social Sciences
M 1:20-3:15PM	3218 Sewell Social Sciences

## DIVISION OF LABOR

I am responsible for the substantive instruction in this course. Charlie Fiss ([charles.fiss@wisc.edu](mailto:charles.fiss@wisc.edu)), the Director of the [Data and Information Services Center](#), is an excellent resource for helping you locate and access data. The TA for the course will provide you with technical assistance in Stata and helping you locate, access and prepare the data you will use for your term paper. The TA will also do his best to compensate for any shortcomings in my classroom instruction.

## COURSE COMMUNICATION and OFFICE HOURS

Our job is to provide you with opportunities to succeed in this course. It is your prerogative to take advantage of those opportunities. Please do not hesitate to email us or to visit us during our office hours. If you are not able to meet with us during office hours we are happy to meet with you at another mutually convenient time.

I will communicate with you by email to let you know about the availability of lecture notes, assignments and other material through the course web page. Please check your email regularly. If you prefer that I use an email address different from the one you have provided to the university send me an email from that account indicating your preference.

## REQUIRED and RECOMMENDED BOOKS

### Required

Fox, John (2015). *Applied Regression Analysis and Generalized Linear Models*. 3<sup>rd</sup> edition. Thousand Oaks, CA: Sage Publications.

Course readings on canvas.

Stata- available through SSCC's [winstat](#) or for free download to install on your own computer for the campus [software library](#).

### Recommended

Allison, Paul D. 1999. *Multiple Regression: A Primer*. Thousand Oaks, CA: Pine Forge Press.

BRING A CALUCLATOR EVERY DAY [doesn't have to be scientific]

## ASSESSMENT

I will assess your performance in this course using three main instruments: a term paper, problem sets and two exams. The term paper will allow you to demonstrate your proficiency with least squares regression in an authentic way, by applying the skills you learn to a sociological research question. The problem sets are exercises to help you improve your understanding of the material and are graded on a simple three point scale from 1 (you gave us nothing or something egregiously incomplete) to 3 (you answered all of the questions and showed evidence of effort). You do not get penalized for getting a question wrong on a problem set; you get penalized for not trying. The exams allow you to demonstrate your ability to recall and synthesize information on demand (without your books and notes). While exams are in some ways the least authentic of the assessments, they are also best suited to tapping deeper knowledge of the material. I will make a practice exam and practice exam answers available to you at least a week in advance so you know what's coming.

Due date	Paper assignments	Share of grade
27-Sep	topic/data	2%
11-Oct	Measures and descriptive stats	3%
30-Oct	regression 1	5%
13-Nov	regression 2/diagnostics	5%
29-Nov	full paper	25%
<b>TOTAL PAPER</b>		<b>40%</b>
Problem sets		
17-Sep	PS1	3%
4-Oct	PS2	3%
16-Oct	PS3	3%
23-Oct	PS4	3%
8-Nov	PS5	3%
20-Nov	PS 6	3%
6-Dec	PS 7	3%
<b>TOTAL PROBLEM SETS</b>		<b>21%</b>
Exams		
24-Oct	Midterm	17%
10-Dec	Final	17%
<b>TOTAL EXAMS</b>		<b>34%</b>
	participation	5%

Please submit all assignments related to your term paper [**P**] to me in Word or some other easily edited format via the course web page. Do NOT send me .pdf or LaTeX files.

Please submit problem sets [**PS**] to me or your TA in hard copy *unless your TA tells you otherwise*. Problem sets are due at the beginning of class.

Final Course Grades:

A	93% and above	C	73% - 75.9%
A-	90% - 92.9%	C-	70% - 72.9%
B+	86% - 89.9%	D+	66% - 69.9%
B	83% - 85.9%	D	63% - 65.9%
B-	80% - 82.9%	F	62% or lower
C+	76% - 79.9%		

<b>CLASS POLICIES</b>
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You should expect me to come to class on time and prepared; I will expect the same from you. If for some reason you are not able to make it on time one day please take the first available seat when you arrive. If you need to leave early one day please sit by the door. I will try to remind you to turn your cell phones off at the beginning of class.

Early and late assignments: Assignment due dates are noted on the syllabus. You may turn your work in early to my mailbox in 909 Social Sciences. Late assignments will be penalized 10 percentage points each day late beginning with the day on which the assignment is due. If you have a documented excuse or emergency, please contact me to discuss it.

Academic integrity:

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to Office of Student Conduct & Community Standards [web site](#).

**If you cheat on an assignment I will give you a zero for that assignment.**

**If you cheat on an exam I will give you a zero for the exam.**

Incompletes: I will only consider giving an incomplete under exceptional circumstances such as extreme illness or hardship. If you have the misfortune to find yourself in a situation that prevents you from completing the work for this course I will require documentation (from a hospital, correctional facility or other entity associated with your incapacitation) prior to giving an incomplete. If you receive an incomplete it is your responsibility to finish the work by the agreed deadline; an incomplete is automatically changed to an "F" if it is not completed.

Accommodations for students with disabilities

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty of their need for instructional accommodations by the

end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty will work either directly with the student or in coordination with the [McBurney Center](#) to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

### *Other accommodations*

If you are a non-native English speaker and wish to have extra time on exams please inform me by [email](#) by the second week of class.

If you wish to request a scheduling accommodation for religious observances, send an email by the end of the second week of the course stating the specific date(s) for which you request accommodation; campus policy requires that religious observances be accommodated if you make a timely request early in the term. See the university's [web page](#) for details.

### *DIVERSITY & INCLUSION*

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

### *Conflict resolution*

The Department of Sociology regularly conducts student evaluations of all professors and teaching assistants near the end of the semester. If you have a grievance with me I hope that you will feel comfortable discussing it with me. If for any reason you do not feel comfortable discussing a grievance with me or are unsatisfied with the outcome of our discussion you should contact Jim Raymo, the chair of our department ([jraymo@wisc.edu](mailto:jraymo@wisc.edu)).

## SCHEDULE

### **WEEK 1 (9/3): Math review/Introduction to data**

- Thursday: Ch. 1  
Pp. 1-9 (“Some Basic Results”) in Neter, John, William Wasserman, and Michael H. Kutner. 1989. *Applied Linear Regression Models*. Homewood: Richard D. Irwin, Inc.

### **WEEK 2 (9/10): Estimators, scales and graphs**

- Tuesday: Introduction to data guest starring Charlie Fiss, Director, Data and Information Services Center
- Appendix D.5 (not D.5.4)  
Pp. 6-32 in DeVellis, Robert F. 1991. *Scale Development: Theory and Applications*. Newbury Park: Sage Publications.
- Thursday: Ch. 3-4.2 (skip 3.1.2); 4.5

### **WEEK 3 (9/17): Introduction to bivariate regression**

- Tuesday: The basic idea Ch. 5.1
- DUE TUESDAY: [PS] 1
- Thursday: Inference Ch. 6.1

### **WEEK 4 (9/24): Introduction to multiple regression**

- Kingston, Paul W., Ryan Hubbard, Brent Lapp, Paul Schroeder, and Julia Wilson. 2003. "[Why Education Matters](#)." *Sociology of Education* 76:53-70.
- Thursday: Tuesday: Extending the model Ch. 5.2 & 6.2
- DUE THURSDAY: [P] Topic and data

### **WEEK 5 (10/01) Inference/Categorical independent variables**

- Tuesday: Thursday: Ch. 7.1-7.2 (skip 7.2.1)
- Thursday: Ainsworth-Darnell, James W. and Douglas B. Downey. 1998. "[Assessing the Oppositional Culture Explanation for Racial/Ethnic Differences in School Performance](#)." *American Sociological Review* 63:536-553.
- DUE THURSDAY [PS] 2

### **WEEK 6 (10/8): Interactions**

- Tuesday: Ch. 7.3
- Thursday: Hughes, Michael and Melvin E. Thomas. 1998. "[The Continuing Significance of Race Revisited: A Study of Race, Class, and the Quality of Life in America, 1972 to 1996](#)." *American Sociological Review* 63.
- DUE THURSDAY: [P] Description of measures and descriptive statistics

### **WEEK 7 (10/15): Regression diagnostics**

- Tuesday: Ch. 11.1-11.7
- DUE TUESDAY: [PS] 3
- Thursday: Reading TBD

### **WEEK 8 (10/22):**

- Tuesday: Review

- DUE TUESDAY: [PS] 4
- **Thursday: Midterm exam**

**WEEK 9 (10/29): Regression diagnostics**

- Tuesday: Ch. 12 (through 12.3)
- DUE TUESDAY: [P] regression 1
- Thursday: Reading [TBD]

**WEEK 10 (11/5): Sampling and collinearity**

- Tuesday: Sampling reading [TBD]
- Thursday: Ch. 13
- DUE THURSDAY: [PS] 5

**WEEK 11 (11/12): Omitted variable bias and missing data**

- Tuesday: Omitted variable bias [Reading TBD]
- DUE TUESDAY: [P] regression 2/diagnostics
- Thursday: 20-20.2, 20.4; selected pages from Allison, Paul D. 2002. *Missing Data*. Thousand Oaks, CA: Sage Publications.

**WEEK 12 (11/19): Regression and causal inference**

- Freedman, David A. 1991. "[Statistical Models and Shoe Leather](#)." *Sociological Methodology* 21:291-313.
- DUE TUESDAY: [PS] 6
- Thursday: NO CLASS

**WEEK 13 (11/26): Robust standard errors/Quantile regression**

- Tuesday: Davern, Michael, Arthur Jones Jr., James Lepkowski, Gestur Davidson, and Lynn A. Blewett. 2006. "[Unstable Inferences? An Examination of Complex Survey Sample Design Adjustments Using the Current Population Survey for Health Services Research](#)." *Inquiry* 48:283-297.
- Thursday: Ch. 19
- Eide, Eric R. and Mark H. Showalter. 1999. "[Factors Affecting the Transmission of Earnings across Generations: A Quantile Regression Approach](#)." *The Journal of Human Resources* 34:253-267.
- DUE THURSDAY: [P] Full paper

**WEEK 14 (12/3) Linear probability**

- Tuesday: Pp. 34-47, 50-52 in Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks: SAGE Publications, Inc.
- Grodsky, Eric and Catherine Riegle-Crumb. 2010. "[Those Who Choose and Those Who Don't: Social Background and College Orientation](#)." *ANNALS of the American Academy of Political and Social Science*. 627:14-35.
- Thursday: REVIEW
- DUE THURSDAY: [PS] 7 (practice exam)

**WEEK 15 (12/10)**

- Tuesday: EXAM