

SOCI 611: The General Linear Model

The University of Calgary, Faculty of Social Sciences, Department of Sociology
Course Outline, Fall Semester, 2009

Instructor Alex Bierman, Ph.D. Office: SS 902 Phone: 403-220-6226 E-mail: aebierma@ucalgary.ca <u>E-mail is the best way to reach me.</u> Office Hours: Wednesdays 12:15 pm – 1:15 pm or by appointment. Teaching Assistant Jill de Groot Office: TBA gjde@ucalgary.ca Office Hours: Fridays, 12:00 pm-1:00 pm	Lecture Schedule: 9:00 am - 11:50 am Wednesdays SS 921 Lab Schedule: 9:00 am - 11:50 am Fridays Social Sciences computer lab Final: 9:00 am Monday, December 14th, 2009 SS921
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Last day to drop full courses and Fall term half courses: Fri., Sep. 18th, 2009

Required Text

McClendon, McKee, J. (2002). *Multiple Regression and Causal Analysis*. (Prospect Heights, IL: Waveland Press).

NOTE: There will also be several additional readings assigned. Two to three copies of these readings will be made available outside of my office on a **two-hour loan basis**.

Recommended Text

Allison, Paul A. (1999). *Multiple Regression: A Primer*. Pine Forge Press.

Course Description and Objectives

This course covers the fundamentals of multiple regression with a focus on the ordinary least squares (OLS) regression model. It also includes an introduction to more complex linear regression models including models with limited dependent variables (e.g. logistic regression). Relevance for sociological research is discussed through examples drawn from the literature. The course also includes a laboratory component where students get the opportunities to apply the techniques and interpretations learnt in class. The software STATA is used for the laboratory component of the course. This course is intended to provide students with the statistical skills to (1) successfully complete a quantitative Master's thesis, (2) understand and critique the wider sociological literature, (3) be prepared for more advanced courses (including SOCI 711).

Prerequisites

SOCI 311 and SOCI 315 or equivalent

Staying in Contact

Class announcements may occasionally be sent out over e-mail. It is your responsibility to ensure that the university has your correct e-mail address and that your e-mail account is in working order. Outside of office hours or pre-scheduled appointments, the best way to reach us is through e-mail. We cannot guarantee that phone calls will be answered or returned. When e-mailing, please put "SOVI 611" in the subject line of your e-mail to help us reply more efficiently to your e-mails. We will make every effort to reply to your e-mails within 24 hours.

Grading System

A+ = 95 and over	B+ = 80-84	C+ = 67-71	D+ = 54-58
A = 90-94	B = 76-79	C = 63-66	D = 50-53
A- = 85-89	B- = 72-75	C- = 59-62	D- = 49 and lower

Grade Distribution

Lab	10%
Exam 1	30%
Exam 2	30%
Final Paper	30%

Course Format

The course setup consists of one two-hour and fifty-minute lecture, along with one two-hour and fifty-minute lab. It is entirely possible that lab time may be devoted to lecturing by either myself or the T.A. You will be expected to know any material presented in labs for exams. This includes knowing how to use Stata and Stata-based syntax, as well as interpreting output from Stata.

Lab Fee

Please note that a \$15.00 lab fee is a part of this class. This fee is payable (in cash) to your T.A. This fee will cover printing **during lab**. We have been instructed that this fee will not cover printing fees outside of lab hours, even if printing is done in the lab, and even if printing is done immediately following lab.

Raising Your Hand

Graduate classes are often conducted in a seminar format, which tends to facilitate a more informal style of class discussion. I highly support this. However, this approach is less conducive to learning in statistics. In my own experience, stopping in the middle of explaining a concept often confuses others who are trying to grasp this concept. Also, I frequently find that questions are answered as I explain the concept. Because of this, I ask that you raise your hand in class and wait to be called on. Please note that I strongly encourage you to ask questions during class, and even question me if you do not believe that a point that I am making is correct. I just ask that you raise your hand first. Please also note that I will often call on students immediately when a hand is raised.

Calculator

You will need a calculator for the exams. Your calculator must have exponent (square) and square root functions. If you fail to bring your calculator, I will not provide a calculator. Calculators on cell phones will not be permitted for exams.

Exam and Term Paper Policies

You must provide advance notice to the instructor if you are unable to take an exam or submit your term paper. All requests for deferral of an examination/term paper due to health reasons must be accompanied by written documentation as outlined in the University Calendar and should be obtained while the student has the physical or emotional problem rather than after recovery. Deferred exams/papers may be allowed in the following circumstances: illness, domestic affliction or religious conviction. If you have missed an exam deadline for a legitimate reason, you will be able to write a “make up” exam as close to the original exam date as possible. Deferred exams/papers will not be granted if it is determined that just cause is not shown by the student. Travel arrangements and misreading of the syllabus are not valid reasons for requesting a deferred exam/paper. Without appropriate documentation or a university valid reason for missing an exam, you will receive a zero for that portion of your grade. Refer to the University of Calgary Calendar for additional information on the deferral of exams:

(http://www.ucalgary.ca/pubs/calendar/2006/how/How_HF.htm). There are no re-writes on any exams/papers in this class and no extra credit work will be given. If you anticipate any difficulties meeting any of the class deadlines, please make sure to discuss your concerns with the instructor before the deadline. I do not grant extensions unless there is an emergency or valid reason as defined by the Deferral of Final Examinations section of the University of Calgary Calendar (http://www.ucalgary.ca/pubs/calendar/2006/how/How_HF.htm).

Because statistics tends to build on concepts, your second exam will be cumulative. You will be permitted one 4” X” 6” note card (front and back) for the first exam, and two for the second. Attempt to answer all parts of test questions. Please note that the schedule in this syllabus is tentative. It is your responsibility to be aware of when an exam will be given.

Labs and Final Paper

Lab is your opportunity to learn to apply the concepts discussed in class to real-world data. The class will work from a large probability sample of residents from the U.S., the MIDUS. The MIDUS is useful for this class because it covers a broad number of topics. Hence, it is likely that most students will find a topic that interests them in these data. Using one specific data source will help ensure that your fellow students, your T.A., and your instructor are familiar with the data, thereby increasing the resources available to you should you have questions on how to analyze this data set. However, if you would like to analyze a different data set, you have this option. If you believe you would like to analyze alternate data, please contact the instructor as soon as possible to discuss this possibility.

A second purpose of the labs will be to help prepare you for the final paper. Early on in the semester, you should pick out a set of variables that speaks to a research question that is sociologically interesting and theoretically meaningful. Throughout the semester, you will learn how to analyze your data to answer this research question. Labs will take the form of (a), reviewing Stata procedures that accompany the concepts discussed in lecture, (b) analyzing a

predetermined set of variables using these procedures, and (c), analyzing your own unique set of variables using these procedures.

Please note that labs are pass/fail. In respect to the graduate level of the class and the presence of a T.A. to facilitate these assignments, competent completion of all parts of the lab will be the only grounds for a pass. Also in respect to the graduate nature of the class, passing all labs will be necessary to receive the 10% of the grade to which your labs are devoted.

Your final paper will take the form of a mini-article. This will involve a set-up which describes your research question and why it is theoretically and sociologically meaningful, a short literature review, a methods section (including description of plan of analysis), a results section, and a discussion section. Please also note that a project proposal will be due on Oct. 28th. Although this proposal will not be graded, it will be critical for successfully completing your final paper. More detail on the format of the paper and proposal will be given closer to the due dates.

Emergency evacuations:

In the case of fire or other emergency evacuation of this classroom/lab, please proceed to the assembly point by the Food Court in the Professional Faculties Building.

Ethics Research: Students are advised that any research with human subjects--including any interviewing (even with friends and family), opinion polling, or unobtrusive observation--must have the approval of the Departmental Ethics Committee. In completing course requirements, students must not undertake any human subjects research without discussing their plans with the instructor, to determine if ethics approval is required.

Academic Misconduct: Plagiarism, cheating and other academic misconduct are regarded as serious academic offences. Students are advised to consult the University Calendar which presents a Statement of Intellectual Honesty and definitions and penalties associated with cheating, plagiarism, and other academic misconduct.

The Freedom of Information and Protection of Privacy (FOIP) legislation disallows the practice of having students retrieve assignments from a public place, e.g., outside an instructor's office or the Department main office. Written assignments must be returned to students individually, during class, or during the instructor's office hours; if a student is unable to pick up her/his assignment s/he may provide the instructor with a stamped, self-addressed envelope to be used for the return of the assignment.

Safewalk: The University of Calgary provides a "safe walk" service to any location on Campus, including the LRT, parking lots, bus zones, and campus housing. For Campus Security/Safewalk call 220-5333. Campus Security can also be contacted from any of the "Help" phones located around Campus.

Academic Accommodation: Students with a disability, who require academic accommodation, need to register with the Disability Resource Centre (MC 295, phone 220-8237). Academic accommodation letters need to be provided to course instructors no later than fourteen (14) days after the first day of class. **It is a student's responsibility to register with the Disability Resource Centre and to request academic accommodation, if required.**

Handing in papers outside of class, return of final papers, and release of final grades:

1. When students are unable to submit papers in class, they should make arrangements to hand in their papers directly to the instructor or teaching assistant. Papers will not be accepted in the main Sociology Department office.
2. Final papers will not be returned through the main Sociology Department office. The Freedom of Information and Privacy (FOIP) legislation disallows the practice of having students retrieve assignments from a public place (i.e. outside an instructor's office, the department office etc.) Students who want their final papers returned by mail must attach a stamped, self-addressed envelope with the paper. Otherwise final papers will be available for pick-up only during the instructor's office hours at the end of this term or at the beginning of the next term.
3. Final grades are not posted by the Sociology Department. They are available only online.

Tentative Course Schedule

Please note that unless otherwise stated, a lab will be held on the Friday following lecture.

Please also note that this schedule is indeed tentative. Given the pace of the class, I may choose to change the time spent on some subject matter, add some topics, or delete others. I will try to do my best to maintain the dates on which exams are given and papers due, but these may change as well.

Week	Lecture Date	Topic/Material
1	Sep. 9	READ THE SYLLABUS!!! A review of everything you should have learned as an undergraduate about statistics, but didn't (or, at least, don't remember).
2	Sep. 16	Chapters 1 through 3.
3	Sep. 23	Finish Chapter 3, begin chapter 4
4	Sep. 30	Finish chapter 4. Begin Chapter 4 part 2 (diagnostics and remedial techniques).
5	Oct. 7	Finish chapter 4 part 2. Begin mediation (time permitting). Note that an extra-text reading on mediation may be assigned.
6	Oct. 14	EXAM 1!!! Note that we'll have lecture during lab. Lecture will continue the lecture on mediation.
7	Oct. 21	Chapters 5 and 7. Note that we will address chapter 6 next week. "
8	Oct. 28	Finish chapter 7. Chapter 6. Project proposals due.
9	Nov. 4	Dichotomous logistic regression. Note that we will have an extra reading.
10	Nov. 11	REMEMBRANCE DAY & READING DAYS. NO CLASS OR LAB.
11	Nov. 18	Exploratory factor analysis and reliability. You will have two extra readings.
12	Nov. 25	Time permitting. Matrix algebra approach to OLS regression. Extending models of limited and categorical dependent variables. Note that we may have an extra reading.
13	Dec. 2	LAST DAY OF CLASS. FINAL PROJECTS DUE. YOU WILL ALSO PRESENT YOUR FINAL PROJECTS IN CLASS. Presenting your final projects. FINAL IN SS 921 9:00 AM, ON MONDAY, DEC. 14.