

January 8, 2017

SOCIOLOGY 515
Quantitative Methods in Social Research
Course Outline
2018 Winter semester

Instructor: Gillian Stevens
Office: HM Tory 6-29
Phone: 780-492-4377
Email: gasteven@ualberta.ca
Office hours: TBA

Seminar Sessions: Thursdays, 1-2:50, T B 104
Lab Sessions: Wednesdays, 10-11:50, Arts 109

Course Description and Goals

Sociology 515 is an MA-level course providing a general overview of quantitative research methods in social science research with a focus on the analysis of survey research data collection, analysis, interpretation, and presentation. Students should have completed an undergraduate course in social statistics (e.g., SOC210) and in social research methods (e.g., SOC315), and have an understanding of basic social science research designs and quantitative data analysis.

The goals of the course include:

Increasing expertise in survey research techniques, including sampling strategies, data collection methods, and questionnaire design

Becoming more adept at statistically analyzing and interpreting survey data

Improving presentation of quantitative social science research projects.

The course is designed as a seminar, and active student participation in classroom discussions is expected. A weekly computer lab has also been scheduled, beginning the second week of classes. Attendance in the labs after the second week is optional if students feel they are sufficiently acquainted with the statistical software to complete the assignments on their own.

Course readings

(1) Students are expected to have access to an introductory text on statistical methods that describes basic tabular analyses and regression analyses. The explanations of statistical techniques presented in the seminar sessions will be based on linear algebra rather than matrix algebra or calculus.

(2) Most of the readings for each particular class session, which are listed by date, will be available on Eclass or online.

(3) Students will be expected to complete assignments and a paper using statistical software. The lab sessions, which are voluntary, will be conducted using SPSS but students are free to use any software that they prefer. It is possible to buy or rent SPSS at student prices from “Onthehub” on the University of Alberta website. For those using SPSS, the following is available as an etext through the University of Alberta library

Aldrich, James O. and James B. Cunningham. 2015. *Using SPSS: An Interactive Hands-on Approach*. Los Angeles: Sage. 2edition. (available as an etext, University of Alberta library).

In previous semesters, students have also found this manual to be useful:
 Pallant, Julie. 2016. *SPSS Survival Manual*. 6th edition. Allen & Unwin.

Assignments and Grading

There is no final examination in this seminar. Student performance will be assessed on the assignments listed below. Late assignments may receive a reduced grade. All course requirements must be completed by the end of the term.

Course Requirements	Tentative Due Date	Percentage of Grade
1. Assignments	various	40
2. In-class presentation of paper/report.	Apr 5 or Apr 12	20
3. Paper/report.	Apr 20	<u>40</u> 100

Lecture and Lab Session Schedule

Dates	Lab session, Seminar session; Readings
Week 1 10-Jan	No lab session
11-Jan	Seminar: Overview of course content and course requirements. Defining a (quantitative) research question <i>Aneshensel, C. 2016. Theory-Based Data Analysis for the Social Sciences. Ch. 1, Introduction to Theory-Based Data Analysis. (book available online via UAlberta library.)</i> <i>Stevens, G. and D. Odynak. 2014. “The Alberta Survey.” In Michalos, A.C. (ed.). Encyclopedia of Quality of Life Research. (handed out)</i>
Week 2 17-Jan	Lab session: Go to Data Library, 2-10 Cameron
18-Jan	Seminar: Where do (census- or survey-based) data come from? Basic survey designs;

Sampling frames & sampling.

Fowler, *Survey Research Methods*, Chapter 3. Sampling.

Statistics Canada. 2015. GSS Cycle 27: Social Identity. Public Microdata File Documentation and User's Guide. (available on the course website, "eclass")

Week 3 24-Jan Lab session: Introduction to SPSS and how to access the General Social Survey

25-Jan Seminar: Designing and evaluating questionnaires;
Example of a poorly designed questionnaire.

Handouts: Cover letter and copy of *P & T Survey*

Fowler, *Survey Research Methods*, chapters 6-8. Available on eclass.

Week 4 31-Jan Lab session: Tabulations and simple descriptive statistics. Accessing your own data file.

Pallant, J. 2016. *SPSS Survival Manual*. Chapter 6.

1-Feb Seminar: Quick review of descriptive statistics (variables, levels of measurement, dummy variables, measures of central tendency & variation; functional forms, graphs).

Handouts: BMI table

Fowler, *Survey Research Methods*, chapters 9-10

Please review basic descriptive statistics, using almost any introductory statistics textbook before this lecture!

Week 5 7-Feb Lab session: Descriptive statistics cont...

5

8-Feb Seminar: Association, correlation, and bivariate regression

Aneshensel, 2016. Chapter 3 & 4.

Lewis-Beck, Michael S. 2004. "Regression." Pg. 936-939 in *The SAGE Encyclopedia of Social Science Research Methods* edited by Michael S. Lewis-Beck, Alan Bryman and Tim Futing Liao. Newbury Park: Sage. DOI: <http://dx.doi.org/10.4135/9781412950589> (a short introduction to regression analysis)

American Statistical Association. 2017. "Statement on Statistical Significance and p-Values." 2016. *American Statistician* 70(2): 131-133.

Available online at:

<http://www.tandfonline.com/doi/full/10.1080/00031305.2016.1154108>

Week 6 14-Feb

6

15-Feb Seminar: Multiple Regression.

Modelling strategies – Elaboration

Weighting (complex sample designs)

Simon, G. 2003. *Multiple Regression Basics*. Course B01.1305 New York University, Stern School of Business.

<http://people.stern.nyu.edu/wgreene/Statistics/MultipleRegressionBasicsCollection.pdf> (Contains a well-written introduction to multiple regression.)

Or James, G., D. Witten, Trevor Hastie and Robert Tibshirani. 2013. *An Introduction to Statistical Learning, with Applications in R*. Springer. Chapter 3: Linear Regression. (Book available online via UAlberta library.)

Aneshensel, 2016. Chapter 5 & 6.

EG: Dooley, David, and Joann Prause. 2005. "Birth Weight and Mothers' Adverse Employment Change." *Journal of Health and Social Behavior* 46 (June):141-155.

	19-Feb	Winter Term Reading Week
Week 7	28-Feb	Lab session: Multiple regression
	1-Mar	Seminar: Variable coding (dummy coding, contrast coding) Modelling strategies – Rival independent variables; Mediation and antecedent variables Aneshensel, 2016. Chapters 9 & 10.
Week 8	7-Mar	Informal lab session
	8-Mar	Visualization of Data Healy, Kieran and James Moody. 2014. "Data Visualization in Sociology." <i>Annual Review of Sociology</i> 40:1, 105-128. Available online: http://www.annualreviews.org/doi/abs/10.1146/annurev-soc-071312-145551 Taei, Paymen. 2017. How to Make Technical Data Simple and Beautiful. Available online: https://towardsdatascience.com/how-to-make-technical-data-simple-and-beautiful-4724038bb74d Retrieved Dec 26, 2017. (A comprehensive description of various types of visualizing data.)
Week 9	14-Mar	Lab session: Informal
	15-Mar	Seminar: Logistic Regression. Interpretation and graphing. Aneshensel, 2016. Chapter 12 <i>Part 2: Logistic Regression. STAT3004 Multivariate Data Analysis</i> (http://pdfengine.co/view?=aHR0cDovL3d3dy5zb3V0aGFtcHRvbi5hYy51ay9naHAzL2RvY3MvdW5pY2VmL3ByZXNlbnRhdGlvbjcuMWEucGRm) contains a very clear overview of logistic regression.

<http://data.princeton.edu/wws509/notes/c6.pdf> provides a good expository introduction to multinomial response models and or <http://www.ats.ucla.edu/stat/spss/output/mlogit.htm> (provides an annotated version of SPSS output)

Week 10 21 Mar Lab session - informal
 22 Mar Seminar: Pitfalls.
 Sample censoring and truncation. Selection processes. Regression towards the mean. The ecological fallacy. Simpson's paradox.
 Anscombe F.J. 1973. "Graphs in statistical analysis". *American Statistician* 27:17-21. (available online)
 Bickel, P.J., E.A. Hammel, J.W. O'Connell. "Sex Bias in Graduate Admissions." *Science* 187:398-404. (available online)

Week 12 28 Mar Lab session - informal
 29 Mar Seminar: Writing (and presenting) a Research Paper. The abstract. The literature review. Methods. Results. Conclusions.
 Choi, Bernard and Anita Pak. 2012. "Methods Section." *Encyclopedia of Research Design*, pages 800-801. Available online. DOI: <http://dx.doi.org/10.4135/9781412961288>
 Salkind, Neil J. 2010. "Discussion Section." *Encyclopedia of Research Design*, pages 375-376. DOI: <http://dx.doi.org/10.4135/9781412961288>

Week 13 4 Apr Lab session - informal
 5 Apr Seminar: Presentations

Week 14 11 Apr Lab session - informal
 12 Apr Seminar: Presentations

20 Apr *Paper Due!*

Other readings of interest

Leon, Lucie, Don Des Jarlais, Marie Jauffret-Roustide, Yann Le Stat. 2016. "Update on respondent-driven sampling: Theory and practical considerations for studies of persons who inject drugs." *Methodological Innovations*. Available online at: <http://mio.sagepub.com/content/9/2059799116672878.full>

Required Notes

Student Accessibility Services

If you have special needs that could affect your performance in this class, please let me know during the first week of the term so that appropriate arrangements can be made. If you are not already registered with Student Accessibility Services, contact their office immediately (1-80 SUB; Email sasrec@ualberta.ca; Email; phone 780-492-3381).

Academic Integrity

“The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarise themselves with the provisions of the Code of Student Behaviour (online at <http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx>) and avoid any behaviour that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.”

Academic Honesty

All students should consult the information provided by the Student Conduct & Accountability Office regarding avoiding cheating and plagiarism in particular and academic dishonesty in general. If in doubt about what is permitted in this class, ask the instructor. An instructor or coordinator who is convinced that a student has handed in work that he or she could not possibly reproduce without outside assistance is obliged, out of consideration of fairness to other students, to report the case to the Associate Dean of the Faculty. See the *Academic Discipline Process*.

Learning and Working Environment

The Faculty of Arts is committed to ensuring that all students, faculty and staff are able to work and study in an environment that is safe and free from discrimination and harassment. It does not tolerate behaviour that undermines that environment. The department urges anyone who feels that this policy is being violated to: • Discuss the matter with the person whose behaviour is causing concern; or • If that discussion is unsatisfactory, or there is concern that direct discussion is inappropriate or threatening, discuss it with the Chair of the Department. For additional advice or assistance regarding this policy you may contact the Office of the Student Ombudsperson. Information about the University of Alberta Discrimination and Harassment Policy and Procedures is described in UAPPOL.

Recording of Lectures

Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the content author(s) or as a part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.