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Fall 9-1-2016

SOCI 562.01: Quantitative Methods

Kathy J. Kuipers

University of Montana, Missoula, kathy.kuipers@umontana.edu

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**Sociology 562
Quantitative Methods
University of Montana**

Professor: Kathy Kuipers
Office: Social Sciences, room 311
Hours: Tuesday (5:10-6:00), Wednesday (2-4:00), and by appointment
Phone: 243-4381 (office); 327-9777 (home—only in emergencies)
Email: kathy.kuipers@umontana.edu

COURSE OBJECTIVES

Quantitative Methods is a course designed to acquaint you with:

- quantitative research methods: the philosophy and logic of research design and its relationship to theory
- the main quantitative techniques used by sociologists and where and how they may be appropriately used
- an introduction to quantitative data, analysis and interpretation
- the importance of ethical issues confronting those who use quantitative research methods

and to give you experience in:

- using techniques and methods for quantitative research including designing an experimental study, designing an evaluation project, creating and administering a survey questionnaire, and locating secondary data and conducting a preliminary data analysis
- drawing your own conclusions
- understanding quantitative analysis and evaluating the conclusions of others
- writing a grant proposal for a research project that uses quantitative methods

The course begins by taking a look at research methods in general and the reasons for using different methods. We will also discuss ethical issues confronting those who conduct research on human subjects. Each of the succeeding sections of the course is organized around a research technique and ends with an exercise designed to give you some experience in using that technique. An additional section focuses on data analysis: some elementary computing and the interpretation of statistical results. Finally, the end of the course will focus on the presentation of findings, resulting in a grant proposal for a research project investigating your own questions using the methods covered in the course.

COURSE REQUIREMENTS

This is an active participation seminar. You are expected to attend ALL class meetings and to actively participate in discussions every class session. Your class participation will be worth 15% of your final grade. Since class sessions will be discussion, focused on the required readings for that day, you should always complete the assigned material before you come to class that day, bring the material to class with you, and participate fully in the discussions. Additionally, you will be assigned to facilitate discussion of the readings on certain days and post questions on the discussion board. If you have questions about the readings or about problems that you have in conducting your research projects, you are

responsible for raising them in class. Texting, talking on your phone, web surfing, and emailing should be done outside of class time. They disrupt your classmates and are disrespectful to your instructor. Leaving class and returning is also very disruptive.

There are five exercises that will form 15% of your grade. You will receive clear guidelines for the structure of the write-ups of the exercises in class and they will be due the following week. LATE ASSIGNMENTS WILL BE PENALIZED (points deducted) and, after a certain period, will no longer be accepted. Three mini-projects, involving actual data collection, also will be due (a survey, an experiment, and a secondary data analysis) and each will count for 15% of your grade. You are required to complete only two of the three mini-projects. The final paper, due the day of the final exam, will be a grant proposal for a project investigating hypotheses or suppositions of your choice using quantitative research methods. The final project/paper will count for 40% of your grade. Handouts with clear guidelines will be discussed in class on expectations for the project and how they will be graded. NO LATE PROJECTS WILL BE ACCEPTED.

READINGS

Four books are required for the course.

- *Approaches to Social Research, Fifth Edition* by Singleton and Straits provides a good summary for all of the material that we will cover and you may want to keep it as a general reference book for doing research.
- In addition to this text, we will use one book that covers some of the same material more specifically for survey research (our most common quantitative data collection method in sociology). *Mail and Internet Surveys: The Tailored Design Method, Fourth Edition* by Dillman, Smyth, and Christian is THE book for all questions on survey research as well as the logic of drawing conclusions from data collected through answers to questions. This book covers all of the most important quantitative data collection techniques as well as ethical and current issues involving data collection. This is another good reference book if you will do surveys in the future.
- A book by Peter M. Nardi focuses on data interpretation: *Interpreting Data: A Guide to Understanding Research*. It helps with understanding how to read results of data analysis, even if you don't know how to run the statistical analyses.
- The fourth book is a pamphlet published by the American Sociological Association, *ASA Style Guide, Edition 5*, to help authors avoid the most common style and format problems when submitting manuscripts for publication. (The formatting basics of the *ASA Style Guide* are also available yearly in each of its journals. It may be downloaded in its entirety from the ASA website—free of charge only IF you are a member.) Students from outside the discipline of sociology may select a different formatting style, but MUST discuss the chosen style with me before turning in papers.

All of these books have been ordered at the UM bookstore. Additional readings are also required and will be available on *Moodle*. Books will also be put on reserve when/if available.

Students also **must** use the course supplement, *Moodle*. Supplemental readings and handouts will be posted on *Moodle*. In order to be prepared for class, you will need to check *Moodle* regularly—at the very least, well before each class meeting, for

announcements, readings, and extra information. Direct your browser to <http://umonline.umt.edu/> or click on “UMOnline - Moodle” from your “my.umt.edu” homepage. In the future, the syllabus, schedule, data, handouts, assignments, supplemental readings, grades, and other information will be posted on the site. I recommend that you bookmark this site and visit it regularly. (See the *Moodle* website and the accompanying course: *UMOnline 101* for more information.) Also, electronic communication is the best way for you to contact me. Please use your university email account, as I am prohibited by UM regulations from responding to emails sent from personal, non-UM email accounts. Check your UM email regularly since this is the main way in which I will contact you with important and timely information concerning the course.

A few words about plagiarism and academic dishonesty

“Plagiarism is the representing of another’s work as one’s own. It is a particularly intolerable offense in the academic community and is strictly forbidden. Students who plagiarize may fail the course and may be remanded to Academic Court for possible suspension or expulsion.” (Taken from *The University of Montana Student Conduct Code*, available online at http://www.umt.edu/vpsa/policies/student_conduct.php). Plagiarism includes:

- Copying from another’s examination or final paper or allowing another to copy from one’s own paper
- Unpermitted collaboration
- Unpermitted sharing of lab assignments and data—your exercises should be your own—output should not be photocopied.
- Giving or receiving unpermitted aid on a paper.

Make sure that your work is your own. Don’t get confused by what is acceptable and what is not. In this class, discussion of ideas is permitted, and even encouraged among classmates. Writing collaboration, however, is not permitted and students should be careful not to work directly from a classmate’s notes, not to work from the same outline, and not to read each other’s papers before they are graded. Neither using another student’s paper as a template for your own nor copying from any written documents (without giving proper credit) are acceptable. Be careful. If this is unclear, please ask.

ACCESSIBILITY

Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. “Reasonable” means the University permits no fundamental alterations of academic standards or retroactive modifications.

TENTATIVE COURSE SCHEDULE (subject to change)

Each of the following sections is arranged according to specific topics to be covered in the course. Topics and required readings for each section are listed below each heading. Our progress through the list may change as we spend more or less time on any particular topic. It is your responsibility to keep up with the readings as we move through the course.

DAY ASSIGNED READING AND/OR IN-CLASS ACTIVITIES

WEEK ONE (August 31)

Section 1: Introduction and Orientation; Using Moodle

In class: course overview, expectations, etc.

Behavioral Research

Introduction to the lab, [SSRL](#) (Jessica Mayrer) and SPSS; Various research methods

Positivism, interpretive orientation, critical theory, feminism/postmodernism

Read Singleton, Chpts. 1 and 2, “Introduction” and “The Nature of Science” (on Moodle, if you don’t have the book)

Do: [Personal Empowerment Through Self-Awareness: PETSA](#)

(<http://www.umt.edu/petsa/>); [Moodle 101](#) (<http://umonline.umt.edu/>)

WEEK TWO (September 6)

Section 2: Foundations of Research

Research Uses and Strategies

Read: Booth, Colomb, and Williams, 2003, *The Craft of Research, Third Edition*, Chpts. 3-4 on Moodle.

Theories and Empirical Tests

Webster and Sell, Chpt. 5 (on Moodle).

Due: Exercise #1A—from questions to problems (concepts and definitions)—submit on Moodle

WEEK THREE (September 13)

Ethical Issues and cultural sensitivities

Read: Singleton, Chpt. 3, “Research Ethics”

Read: Cook and Yamagishi, 2008. “A Defense of Deception on Scientific Grounds” (on Moodle)

Read: [ASA Code of Ethics](#): (<http://www.asanet.org/about/ethics.cfm>) (also click on the Code of Ethics PDF link)

Writing a Literature Review: **Kelly Webster**, The Writing Center, Presentation about

Read: Booth, Colomb, and Williams, 2003, *The Craft of Research*, Chpts. 5-6 on Moodle.

WEEK FOUR (September 20)

Section 3: Research Planning and Preparation

Read: Singleton, Chpt. 4, “Elements of Research Design”

Measurement: what do data look like?

Read: *ASA Styleguide*, Chpts. 1-5

Due: Exercise #1B—literature review exercise due—submit on Moodle

WEEK FIVE (September 27)

Research Design

Read: Singleton, Chpt. 5, “Measurement”

Read: Dillman, Chpt. 1

Read: Regnerus article on *Moodle*

In-class: Critique research for validity and reliability

Section 4: Experimental Research

Read: Singleton, Chpt. 7, "Experimentation"

In-class: answer questions on p. 228

Read: Willer and Walker, Chpt. 1 (on *Moodle*)

Due: Exercise #2—IRB assignment—submit on Moodle

WEEK SIX (October 4)

Designing experiments

Read: Singleton, Chpt. 8, "Experimental Designs"

Read: Willer and Walker, Chpt. 5 (on *Moodle*)

WEEK SEVEN (October 11)

Section 5: Evaluation Research

Read: Evaluation Manual (on *Moodle*)

Chuck Harris, SSRL, on evaluation research

Read: Singleton, Chpt. 14, "Evaluation Research"

Visit: [American Evaluation Research Association website](http://www.eval.org/)
(<http://www.eval.org/>)

Talk about projects

WEEK EIGHT (October 18)

Read: Webster and Sell, Chpt. 13 (on *Moodle*.)

Read: Clayton, "The Effectiveness of the DARE Program..." (on *Moodle*)

Section 6: Survey Research

Questionnaire Construction

In-class: Talk about projects.

Due: Mini-Experiment/Evaluation project

WEEK NINE (October 25)

Questionnaires; Types of Surveys

Read: Dillman, Chpts. 2, 4-8

WEEK TEN (November 1)

Entering Data and Sampling

Read: Dillman, Chpts. 3, 9, and 10

Looking at Data

Read: Nardi, *Interpreting*, Chpts. 1-3

Due: Exercise #3—Interpreting Data

WEEK ELEVEN (November 8-NO CLASS)

Sampling

Read: Singleton and Straits, Chpt. 6

Due: Mini-survey project

WEEK TWELVE (November 15)

Section 7: Using Available Data

In-class: ICPSR, **Julie Edwards**, Mansfield Liaison Librarian

Do sampling exercise in class

Section 8: Data Analysis and Interpretation

Read: Nardi, *Interpreting*, Chpts. 4-5

Due: Exercise #4—Interpreting Data

WEEK THIRTEEN (November 22)

Section 9: Data Analysis and SPSS

Read: Intro to SPSS (on *Moodle*)

Read: Singleton, Chpt. 15, “Data Processing and Elementary Data Analysis”

Read: Singleton, Chpt. 12, “Research Using Available Data”

In-class: **Jodi Todd**, Grant Support Specialist?

WEEK FOURTEEN (November 29)

Non-reactive Research: Content Analysis, Historical Analysis, Comparative Analysis

Read: Thomas and Treiber, Sorensen et al., Scribner and Cohen, Walsch, Flanagan et al. and Perry (on *Moodle*)

Section 10: Writing a Grant Proposal

Read: Stephens, pp. 1-64, *Writing an effective NSF pre-proposal* (on *Moodle*)

Read: [Research Proposals: Funding Information](#)

(<https://www.umt.edu/research/ORSP/propdev/funding/default.php>)

Due: Mini-secondary data project

WEEK FIFTEEN (December 6)

Writing Research Reports and Grant Proposals

Read: Singleton, Chpt. 17, “Writing Research Reports”

Review: Webster and Sell, Chpt. 8 (on *Moodle*)

Objectives, significance, methodology, expertise, budget, and cover sheet; ethics review

Skim: *ASA Style Guide*

Course Assessment

December 14 Due: Final Paper (3:20)