

**Sociology 562
Quantitative Methods
University of Montana**

Professor: Kathy Kuipers
Office: Social Sciences, room 311
Hours: Friday (1-4)¹, and by appointment (via *Navigate*)
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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 also will 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

¹. You should sign up for office hours online with *Navigate*. Until *Navigate* is functional, please just sent me email and we can schedule a time. **Drop-In Office Hours** have been changed to Friday afternoons (1:00-4:00). Just click on the link (contact me for link) and you will be directed to a Zoom waiting room. I may or may not be speaking with students. In order to protect student privacy, you will need to remain in the waiting room until I have finished speaking with the previous student. When that student has departed, I will enter you into the Zoom conference room. If it will be a particularly long wait, I will send you a message to let you know and we can reschedule. Alternatively, send me an email message requesting an appointment and let me know times that you are available. I'll respond with some suggestions for a scheduled Zoom office meeting.(Please try to let me know ahead of time if you will be coming to office hours. Zoom notifies me if you are in the waiting room, but I don't always trust them and I don't want to miss you.).

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 via Zoom) and to actively participate in discussions every class session.² Your class participation will be worth 15% of your final grade. Since class sessions will be for discussion, focused on the lecture and 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. I expect that you will enable your camera for each class session so that I and the class can see you. I don't want to be teaching to blank screens with just your name or photo. I need to know that you are present.³

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, uploaded to *Moodle*. 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 or evaluation using experimental design, and a secondary data analysis) and each will count for 20% 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 30% 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, Sixth 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.

² THIS IS IMPORTANT. This class is listed as a **remote** class in the catalog. And it is synchronous. But it is not simply an online course to take on your own time. You **MUST** attend class when it is offered. I will send you the link via email so that you can “attend” using Zoom. If you do not have computer access, please let me know. You will need a camera so we can see you and if you need to call in, rather than video conference, please let me know and I’ll send you the call-in information. (Please only do this if you don’t have access to high-speed WIFI and/or the technology required to participate fully.)

³ Obviously, outside noises, engaging in other activities during class, and the presence of others during our Zoom class are not acceptable. They disrupt your classmates and are disrespectful to your instructor. Leaving class and returning is also very disruptive. (If you must attend class from a public space, it’s o.k. But please use headphones or earbuds with a microphone and set up so that your camera captures only you and does not capture other activities.)

- In addition to this text, we will use a 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 conduct 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. This book is out of print but used copies are available for less than \$10 on Amazon.
- The fourth book is small and published by the American Sociological Association, *ASA Style Guide, Edition 6*, 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. You will be graded accordingly.

All of these books have been ordered at the UM bookstore, but they are available on other book sale sites as well. Additional readings are also required and will be available on *Moodle*.

Students **must** use the course supplement, *Moodle*. Class lectures, 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. 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.

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). 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.

BASIC NEEDS

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

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.

WEEK ONE (August 19)

Section 1: Introduction and Orientation; Using Moodle

In class: course overview, expectations, etc.; discuss Exercise #1A

Behavioral Research

Introduction to the lab, [SSRL](#) 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 yet have the book)

WEEK TWO (August 26)

Section 2: Foundations of Research

In class: discuss lecture and readings

Research Uses and Strategies

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

Attend: [Mansfield Library Workshops](#): “Jumpstart Your Research” and “Cite it Right with RefWorks” and “Grant Research 101”⁴

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 2)

Ethical Issues and cultural sensitivities

In class: discuss lecture and readings; prepare for Exercise #1B

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

Writing a Literature Review, The Writing Center,

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

View: Mansfield Library’s [Sociology Research Guide](#); [Credo’s Information Literacy – Core](#) (a set of online videos, tutorials, and quizzes covering information literacy and critical thinking, as well as related topics and skills), [Mansfield Library Workshops: “Jumpstart Your Research”](#)

WEEK FOUR (September 9)

In class: discuss lecture and readings; prepare for Exercise #2

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 16)

In class: discuss lecture and readings

Research Design

Read: Singleton, Chpts. 4, “Elements of Research Design,” and 5, “Measurement”

Read: Dillman, Chpt. 1

Read: Regnerus article on *Moodle*

In-class: Critique Regnerus 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*)

⁴ These are titles of previously offered Workshops. Browse and check out titles when they are available.

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

In-class: prepare for Experimental Mini-project assignment

WEEK SIX (September 23)

Designing experiments

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

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

In-class discussion of presentation on evaluation research; prepare for Evaluation Mini-project assignment

WEEK SEVEN (September 30)

Section 5: Evaluation Research

Read: Evaluation Manual (on *Moodle*)

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

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

(<http://www.eval.org/>); be prepared to talk about what you find

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

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

In class: discuss and analyze DARE program evaluation

WEEK EIGHT (October 7)

Section 6: Survey Research

Questionnaire Construction

In-class: Talk about projects. Prepare for Survey Mini-Project

Due: Mini-Experiment/Evaluation project

Questionnaires; Types of Surveys

Read: Dillman, Chpts. 2, 4-8

In-class: discuss readings and prepare for Exercise #3

WEEK NINE (October 14)

Entering Data and Sampling

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

Qualtrics

Looking at Data

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

Due: Exercise #3—Interpreting Data

WEEK TEN (October 21)

Sampling

Read: Singleton and Straits, Chpt. 6, "Sampling"

WEEK ELEVEN (October 28)

Section 7: Using Available Data

Read: [Library Guide to ICPSR](http://libguides.lib.umt.edu/ICPSR), (<http://libguides.lib.umt.edu/ICPSR>)

Explore the ICPSR tabs (FAQ and Workshop Notes), view

"Orientation to ICPSR with a Fresh New Look" and at least one other

YouTube Video on the topic and read the “Instruction Session”
handout; be prepared to give a presentation one of the YouTube
Videos that you view.

In-class: ICPSR workshop

In-class: Do sampling exercise

Due: Mini-survey project

Section 8: Data Analysis and Interpretation

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

Singleton, Chpt. 16 “Multivariate Analysis”

Due: Exercise #4—Interpreting Data

In-class: Prepare for Mini-secondary Data Project

WEEK TWELVE (November 4)

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: Grant Support Specialist

In-class: Prepare for final paper, a Grant Proposal

WEEK THIRTEEN (November 11)

Veterans Day Holiday—NO CLASS

Please view lecture on your own during this week.

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)

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

Due: Mini-secondary data project

WEEK FOURTEEN (November 18)

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

November 24 Due: Final Grant Proposal Paper (1:10)