INTRODUCTION TO STATISTICAL THINKING IN SOCIOLOGY (SOCIOLOGY 261)
Online (Lecture section 201, Lab section 904 or 905)

This course satisfies the GER Quantitative Literacy B (QL-B) requirement. It is also required for the BA in Sociology and the BS in Criminal Justice, and can be used for the introductory statistics requirement in the Quantitative Social Data Analysis (QSDA) certificate program.

Lectures and Labs share the same Canvas page.

Instructor: Dr. Aki Roberts

E-mail: aki@uwm.edu
I will respond to student e-mail within 24 hours (excluding weekends). Often I will respond sooner than that, but students should not count on an immediate response to a time-sensitive e-mail (for example, a last-minute question on the day an assignment is due) and should plan accordingly. This timeframe also applies to the TAs’ responses to student e-mail.

Office Hours
Mondays between 3:00 pm and 5:00 pm @ Bolton Hall 740. Students can also request a virtual meeting.
Teaching Assistant 1: Hannah Smith, M.A. (Sociology PhD student)
Email: smit2788@uwm.edu
Office hours: Thursdays between 2:00 and 4:00 pm @ Bolton Hall 718. You can also request a virtual meeting.

Teaching Assistant 2: Yi Yin, M. A. (Sociology PhD student)
Email: yin4@uwm.edu
Office hours: Thursdays between 10:00 am and noon @ Bolton Hall 720. Students can also request a virtual meeting.
1) Prerequisites

1. Sociology 101 OR sophomore standing.

2. A satisfactory grade in GER Quantitative Literacy A (QL-A) (such as Math 102, 103, 105, 108, or 111).

3. Because this is an online course, you must be familiar with Canvas and the basics of computers.

4. You must be able to download and install SPSS on your own computer (PC or Mac) or visit the labs on campus. See Section 9) SPSS software below for the download instructions.

5. You must be able to take pictures of your hand-written answers for assignments and exams and be able to upload them in Canvas.

6. You must have access to a strong internet connection.

2) Course Objectives

Introduction to data analysis in social science research. Students will learn a lot of "statistics", but with the intent of using and interpreting the statistics in addressing social science questions. Students will learn how to calculate various statistics, both with a hand calculator and with SPSS software, and will learn how to interpret the statistics. The course will include both lectures and computer labs. Lectures focus on fundamental ideas in statistics, calculation of statistics using a calculator, and interpretation of the resulting numbers. Labs focus on calculation of statistics using SPSS software as well as interpretation of the resulting output. Note that lectures and labs share the same Canvas page.

See the Appendix for the learning objectives for QLB courses, and how this course meets them, at the end of this syllabus.

3) Optional Textbook

We will mainly rely on the lecture notes and videos, but students who wish to have an optional textbook can purchase Social Statistics for a Diverse Society by Frankfort-Nachmias and Leon-Guerrero, Pine Forge Press (available from the UWM e-bookstore). The textbook is also on the library reserve.

4) Course Format

The course (both lectures and labs) is conducted online via Canvas. Please note that this is not a U-pace course, so that you are not able to set your own deadlines. Instead I set up the pace of the course by posting the next task after the previous task’s due date. That is, after the due date for the first assignment in the course schedule (shown at the end of the syllabus), I will post the instructions and material for the second assignment, and so on. I will post an announcement on Canvas every time I post new tasks and associated materials.

5) HWs and Exams

There will be 6 Lecture (hand-calculation with a calculator) HWs, 3 Lab (SPSS) HWs, and 3 Exams.

*Lecture (hand-calculation) HWs (30% of the total grade, 5% each)*
There will be 6 Lecture (hand-calculation with a calculator) homework assignments.

Students are NOT allowed to use SPSS or other statistical software for lecture assignments; a calculator must be used.

Students can get help from me or from the TAs on lecture assignments. Note that students cannot copy other students’ answers (which would result in identical wording, duplication of unique calculation mistakes, etc.). This is considered plagiarism. All students involved in this kind of plagiarism will receive an F for their course grade and will be reported to University authorities.

**Lab (SPSS) HWs (15% of the total grade, 5% each)**

There will be 3 lab homework assignments using SPSS.

Students must use SPSS for these assignments, not some other software.

Students can get help from me or the TAs on lab (SPSS) assignments. Note that students cannot copy other students’ answers (which would result in identical wording, duplication of unique calculation mistakes, etc.). This is considered plagiarism. All students involved in this kind of plagiarism will receive an F for their course grade and will be reported to University authorities.

**Exams (54% of the total grade, 18% each)**

There will be 3 exams, each involving hand-calculation (using a calculator) and interpretation problems. The exams will not include any questions on how to use SPSS. Exam questions will appear on Canvas at noon on the dates listed in the course schedule, and you will have three hours to complete the exam and submit (each exam is designed to take about 50 min to complete).

Exams are open book. You are allowed to use materials (notes, etc.) from our current course. However, answers should be entirely your own work, meaning that you should not seek help from another person (including the TAs, classmates, friends, and family members), or any outside (including online) sources. Violating this rule is considered academic misconduct. All students involved in academic misconduct will receive an F for their course grade and will be reported to University authorities. See 12) Academic Misconduct section below for details.

6) Essential Steps for HWs and Exams

For each HW and exam, I will post a Canvas announcement with detailed instructions. It will be very easy to follow those instructions, but see below for the overall process.

**Steps for Lecture (hand-calculation) HWs**

1. Watch videos of lectures, sometimes watching a video multiple times if necessary to understand the material. Lecture videos and notes will be posted on Canvas. Lectures will cover conceptual overviews and hand-calculation of statistics with a calculator. I might post multiple videos for a task. Do not skip any videos, and be sure to watch them in order.
2. Study lecture notes and work on your own on the examples used in the videos.

3. Work on the practice questions (solutions are included).

4. Ask questions during office hours and via email if necessary. Please note that I can monitor many of your Canvas activities, including the time spent watching any particular video. So make sure that you watch the videos and study the notes thoroughly before asking questions.

5. Complete and submit your answers to the Lecture (hand-calculation) Assignments via Canvas by the due dates.

6. Solutions for the Lecture (hand-calculation) Assignments will be posted on Canvas after the due date. Read the feedback that you get on your assignments and ask questions if you have any.

**Steps for Lab (SPSS) HWs**

1. Watch videos of lectures and SPSS (Lab) instructions, sometimes watching a video multiple times if necessary to understand the material. Step-by-step SPSS instruction videos (and handouts) will be posted on Canvas. I might post multiple videos for a task. Do not skip any videos, and be sure to watch them in order.

2. Study the handouts and work on your own on the examples used in the videos.

3. Ask questions during office hours or via email. Please note that I can monitor many of your Canvas activities, including the time spent watching any particular video. So make sure that you watch the videos and study the notes thoroughly before asking questions.

4. Complete and submit Lab (SPSS) assignments via Canvas by the due dates.

5. Solutions for the Lab (SPSS) Assignments will be posted on Canvas after the due date. Read the feedback that you get on your assignments and ask questions if you have any.

**Steps for Exams**

1. When studying before the exam, repeat the steps in the **Steps for Lecture (hand-calculation) HWs** if necessary.

2. Work on practice and review questions posted in Canvas (no need to hand in your answers for practice and review questions).

3. Exam questions will appear on Canvas at noon on exam days (10/5 – Exam 1, 11/9 – Exam 2, 12/14 – Exam 3). Complete and submit your answers to exams via Canvas by 3:00 pm of the exam day.

7) **Submission for HWs and Exams**
Again, Canvas announcements will take you to the detailed instructions on how to submit HWs and Exams, but see below for the overall process.

**How to submit Lecture (hand-calculation) HWs**

Write down your answers (showing all your work) on blank sheets of paper, writing page numbers on each sheet (for example, page 1, page 2, page 3, page 4, etc., written at the top of the sheet).

Take pictures of your answers (**one page per picture**). E-mail the pictures to yourself (**do not use airdrop because I cannot comment on HEIC files**), and download (save) the files on your computer (or on the flash drive). Check if the answers are readable on your computer. [You can also submit the pictures directly from your smartphone using the “Canvas Student” app. However, that method is not as reliable, because it is hard to check if your submission is readable from your phone. So unless it is an emergency, do not use that method.]

In Canvas, click “Assignments”, and choose the appropriate assignment (e.g. Lecture HW 1). Submit those files by clicking the yellow [Start Assignment] tab (upper right-side corner) and uploading files **in order**.

Your files will appear on the right-hand side (under the “Submitted!” sign). Click on each file and check if it is readable. If not, you can redo the process and resubmit.

**How to submit Lab (SPSS) HWs**

For the lab assignments, you can copy and paste the output from SPSS to Word, and also type your other answers in Word (so that the SPSS output and other typed answers are in the same Word file; the TAs will show you how to do this in the example), save, and submit the doc or docx file.

In Canvas, click “Assignments”, and choose the appropriate assignment (e.g. Lab HW 1). Submit the file by clicking the yellow [Start Assignment] tab (upper right-side corner), and upload.

Your file will appear on the right-hand side (under the “Submitted!” sign). Make sure that it is the correct file.

**How to submit Exams**

Write down your answers (showing all your work) on blank sheets of paper, writing the page number on each sheet (e.g., page 1, page 2, page 3, etc., written at the top of the sheet).

Take pictures of your answers (**one page per picture**). Send the pictures to your e-mail account (**do not use airdrop because I cannot comment on HEIC files**), and download (save) the files on your computer. Check if they are readable on your computer. [You can also submit the pictures directly from your smartphone using the “Canvas Student” app. However, that method is not as reliable, because it is hard to check if your submission is readable from your phone. So unless it is an emergency, do not use that method.]

In Canvas, click “Assignments”, and choose the appropriate assignment (e.g. Exam 1). Submit those files by clicking the yellow [Start Assignment] tab (upper right-side corner) and uploading files **in order**.
Your files will appear on the right-hand side (under the “Submitted!” sign). Click on each file and check if it is readable. If not, you can redo the process and resubmit.

8) Submission Practice Assignment

Students are required to do submission practice for hand-written answers (due 9/7 @ 11:59 pm). I am assigning 1% of the total grade for the submission practice assignment.

9) SPSS Software

SPSS is a statistical software program that calculates statistics from a data set. SPSS is a good skill to learn, and this software is used in various fields including social sciences, business, health, criminal justice, and social work. In fact SPSS skill is more unique, and therefore potentially more marketable, than Excel skill.

UWM students can download and install SPSS for free on your computer (Mac and Windows versions are available). The version provided by UWM is 27, but any other version should work fine (if you happened to have SPSS already installed on your PC).

How to obtain SPSS for your home computer (Mac or Windows)

Visit https://techmallshop.uwm.edu/xcart/e-shop/home.php

Log in with UWM id and password.

Under “Categories”, click on “Software Home Use”.

Scroll down and find SPSS.

Click “add to cart” symbol on the right (note that there are Mac and Windows versions, make sure that you select the correct version).

In the next screen, click “add to cart” symbol again. Go up and click on “check out” in the yellow bar.

Click on “submit order” (bottom right hand side).

You will receive an email from the UWM TechStore with a download URL. Click the URL and you will be taken to the download page for SPSS on the TechStore website.

Scroll down and click the blue "Download" button.

Open the installation instructions in the downloaded ZIP file (a document labelled “Installation Instructions for SPSS 28 for Mac OS X.pdf” or “Installation Instructions for SPSS 28 for Windows.pdf” depending on the type of computer you have).

The Installation Instructions sheets provide detailed information and screenshots regarding the authorization and installation of the software for your specific type of computer. Follow the exact steps included in this sheet.

The SPSS installation requires an authorization code. This code is included in the downloaded ZIP file also (in a document labelled “authorizationCodes.txt”). You can open this document and copy the authorization code.
In the past, some students had problems installing SPSS due to their computers having out-of-date or illegal operating systems, viruses and malware, or other fundamental problems. Because those are technical and individualized issues, I cannot fix them. If you have issues related to the SPSS installation, you will need to directly Campus IT using the form at https://uwm.edu/technology/request-support/.

**Students without a computer**

SPSS is installed on every computer in the campus computer labs, including labs at the Union, Library, and Bolton 2nd floor.

**10) Grading**

Final course grades are based on overall scores calculated by weighting different graded elements as follows:

- Exam 1: 18%
- Exam 2: 18%
- Exam 3: 18%
- 6 Lecture (hand calculation) assignments: 30% (5% each)
- 3 Lab assignments: 15% (5% each)
- Submission practice: 1%

**11) Letter Grade Conversion**

Note that I round up the decimals when assigning final grades.

- A (94-100)
- A- (90-93)
- B+ (87-89)
- B (83-86)
- B- (80-82)
- C+ (77-79)
- C (73-76)
- C- (70-72)
- D+ (67-69)
- D (60-66)
- F (0-59)

**12) Late Submission, and Makeup Exams and Assignments**

Students are required to submit assignments and exams by the listed due dates. Late submissions will not be accepted, expect for the circumstances listed below. Note that computer, smartphone, software, and internet issues are NOT typically valid reasons to request makeup exams and assignments or due date extensions. To avoid those issues, students are encouraged to plan accordingly, and submit the answers early.

**Illness and other emergencies**

In case of illness, you should contact me immediately to discuss options for completing course work while ill. As your instructor, I will trust your word when you say you are ill, and in turn, I expect that you will report the reason for your absences truthfully.

Makeup exams and extended deadlines for assignments are also allowed for some non-medical emergencies (for example, jury duty, death in the family, military service, etc.). For those, the student must send appropriate documentation (such as obituary, a letter from a judge, military orders) via email. Please note that not all possible reasons for a makeup will be accepted (for instance, a family vacation is not an acceptable reason).
Religious observances
Makeup exams and extended deadlines for assignments are allowed in the case of religious observances. The University policy on religious observances requires students to notify the instructor, within the first three weeks of the beginning of classes (within the first week of summer session and short courses), of the specific days or dates on which he or she will request relief from an examination or academic requirement.

13) Academic Misconduct
I take academic misconduct seriously. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Policies for addressing cheating on exams or plagiarism can be found at the following site: http://www4.uwm.edu/osl/dean/conduct.cfm. According to UWM policy, I am required to report all suspicious cases to the Dean of Students Office. The sanctions for academic misconduct include F for the course, removal from the course, and academic probation and suspension.

14) Course Schedule (also see the Canvas calendar)

Important due dates are in green (also indicated in the Canvas calendar). Chapter numbers refer to chapters in the optional (again not required) text.

9/2 (Thursday) – Materials necessary for Lecture (hand-calculation) HW 1 are posted. The areas covered are research methods (chapter 1) and descriptive statistics (frequency distributions (chapter 2), measures of central tendency (chapter 4), and measures of variability (chapter 5)).

9/7 (Tues) – Submission practice for hand-written answers is due @ 11:59 pm.
9/14 (Tues) - Lecture (hand-calculation) HW 1 is due @ 11:59 pm.

9/15 (Wed) - Materials necessary for Lab (SPSS) HW 1 are posted. The area covered is descriptive statistics with SPSS.

9/21 (Tues) - Lab (SPSS) HW 1 is due @ 11:59 pm.

9/22 (Wed) – Materials necessary for Lecture (hand-calculation) HW 2 are posted. The area covered is probability (lecture notes only, no corresponding chapter in the book).

9/30 (Thurs) - Lecture (hand-calculation) HW 2 is due @ 11:59 pm

10/5 (Tues) – Exam 1 questions are posted at noon, and answers are due @ 3:00 pm.
10/5 (Tues) – Materials necessary for Lecture (hand-calculation) HW 3 are posted. The area covered is the normal distribution (chapter 6).

10/19 (Tues) – Lecture (hand-calculation) HW 3 is due @ 11:59 pm.

10/20 (Wed) – Materials necessary for Lab (SPSS) HW 2 are posted. The area covered is the normal probability distribution with SPSS.

10/26 (Tues) – Lab (SPSS) HW 2 is due @ 11:59 pm.
10/27 (Wed) – Materials necessary for Lecture (hand-calculation) HW 4 are posted. The area covered is sampling probability distributions (chapter 7).

11/4 (Thurs) – Lecture (hand-calculation) HW 4 is due @ 11:59 pm.

11/9 (Tues) – Exam 2 questions are posted at noon, and answers are due @ 3:00 pm.

11/9 (Tues) – Materials necessary for Lecture (hand-calculation) HW 5 are posted. The area covered is hypothesis testing (chapter 9)

11/22 (Mon) – Lecture (hand-calculation) HW 5 is due @ 11:59 pm.

11/23 (Tues) – Materials necessary for Lecture (hand-calculation) HW 6 are posted. The area covered is correlation & regression (chapter 13).

12/3 (Fri) – Lecture (hand-calculation) HW 6 is due @ 11:59 pm.

12/4 (Sat) – Materials necessary for Lab (SPSS) HW 3 are posted. The area covered is correlation & regression with SPSS.

12/10 (Fri) – Lab (SPSS) HW 3 is due @ 11:59 pm.

12/14 (Tues) – Exam 3 questions are posted at noon, and answers are due @ 3:00 pm.

15) Estimated Time Commitment
It is expected that students will spend about 10 hours per week completing work related to this course. On average over the semester, students will spend 2 ½ hours in watching lecture or SPSS videos (37.5 hours total for 15-week semester, 40 hours total for 16-week semester), about 2 ½ hours reading the text and reviewing lecture notes (37.5 hours total for 15-week semester, 40 hours total for 16-week semester), and about 5 hours working on assignments (75 hours total for 15-week semester, 80 hours total for 16-week semester). The course requires 150 hours of total time commitment for a 15-week semester and 160 hours of total time commitment for a 16-week semester.
UNIVERSITY AND SOCIOLOGY DEPARTMENT POLICIES

The Secretary of the University maintains a web page that contains university policies that affect the instructor and the students in this course, as well as essential information specific to conduct of the course. The link to that page is: https://uwm.edu/secu/wp-content/uploads/sites/122/2016/12/Syllabus-Links.pdf

Students with Disabilities. In the pursuit of equal access and in compliance with state and federal laws, the University is required to provide accommodations to students with documented disabilities. To learn more, please visit: http://uwm.edu/arc/

Religious Observances. Policies regarding accommodations for absences due to religious observance are found at the following: http://www4.uwm.edu/secu/docs/other/S1.5.htm

Students called to active Military Duty. Students called to active military duty. Accommodations for absences due to call-up of reserves to active military duty should be noted. Students: http://uwm.edu/active-duty-military/

Incompletes. A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work. https://apps.uwm.edu/secu-policies/storage/other/SAAP%201-13.%20Incomplete%20Grades.pdf

Discriminatory Conduct. Discriminatory conduct will not be tolerated by the University. It poisons the work and learning environment of the University and threatens the careers, educational experience and well-being of students, faculty and staff. Policies regarding discriminatory conduct can be found at: https://apps.uwm.edu/secu-policies/storage/other/SAAP%205-1.%20Discriminatory%20Conduct%20Policy.pdf

Title IX/Sexual Violence. Title IX is a federal law that prohibits sex discrimination in education program or activities, and UWM policy prohibits such conduct (see Discriminatory Conduct, above). This includes sexual violence, which may include sexual harassment, sexual assault, relationship violence, and/or stalking in all educational programs and education-related areas. UWM strongly encourages its students to report any instance of sex discrimination to UWM's Title IX Coordinator (titleix@uwm.edu). Whether or not a student wishes to report an incident of sexual violence, the Title IX Coordinator can connect students to resources at UWM and/or in the community including, but not limited to, victim advocacy, medical and counseling services, and/or law enforcement. For more information, please visit: https://uwm.edu/sexual-assault/

Academic misconduct. Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/

Complaint procedures. Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy. https://apps.uwm.edu/secu-policies/storage/other/SAAP%205-1.%20Discriminatory%20Conduct%20Policy.pdf

Grade appeal procedures. A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides or in the case of graduate students, the
Graduate School. These procedures are available in writing from the respective department chairperson or
the Academic Dean of the College/School. https://apps.uwm.edu/secu-policies/storage/other/SAAP%201-
10.%20Grade%20Appeals%20by%20Students.pdf

**LGBT+ resources.** Faculty and staff can find resources to support inclusivity of students who identify as LGBT+
in the learning environment. https://uwm.edu/lgbtrc/

**Smoke and Tobacco-Free campus.** UWM prohibits smoking and the use of tobacco on all campus property.
https://apps.uwm.edu/secu-policies/storage/other/SAAP%2010-8.%20Smoke%20and%20Tobacco-
Free%20Campus%20Policy.pdf

**Final Examinations.** Information about the final exam requirement, the final exam date requirement, and make-up
examinations. https://apps.uwm.edu/secu-policies/storage/other/SAAP%201-
9.%20Final%20Examinations.pdf

**Book Royalties.** In accord with department policy, the royalties from the sale of UWM sociology faculty-
authored books to students in their classes are donated to a UWM Foundation/Sociology Account to support
future awards and activities of UWM sociology students.

Updated 08/2020

The University of Wisconsin Milwaukee 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) 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 [me]
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 [I], will work either directly with the student [you] or in
coordination with the Accessibility Resource 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.

**Panther Community Health and Safety Standards:** UWM has implemented reasonable health and safety
protocols, taking into account recommendations by local, state and national public health authorities, in response to
the COVID-19 pandemic. As a member of our campus community, you are expected to abide by the Panther
Interim COVID-Related Health & Safety Rules, which were developed in accordance with public health guidelines.
These standards apply to anyone who is physically present on campus, UWM grounds, or participating in a UWM-
sponsored activity:

• All individuals visiting UWM facilities must wear face coverings while indoors;
• Unvaccinated students coming to campus are required to test weekly for COVID-19; and
• You should check daily for COVID-19 symptoms and not come to campus if you are feeling sick.

Additional details about student and staff expectations can be found on the UWM COVID-19 webpage.

**Students in Need:** Any student who faces challenges securing their food, housing, or technology, or is struggling
with mental, physical, or emotional health, and believes this may affect their performance in the course is urged to
contact the Dean of Students (dos@uwm.edu) for support. Furthermore, please notify the professor if you are
comfortable doing so. This will enable them to provide any resources that they may have and can connect you to
the Dean of Students as well.
QLB Learning Objectives, and How This Course Meets Them

(a) Students will recognize and construct mathematical models and/or hypotheses that represent quantitative information.
   Students will work with variety of mathematical formulas and equations, learn how to set up statistical hypotheses, and learn simple models for population characteristics and relationship between variables.

(b) Students will evaluate the validity of these models and hypotheses.
   Students learn methods for statistical testing and estimating simple models.

(c) Students will analyze and manipulate mathematical models using quantitative information.
   Students learn both hand calculation and use of statistical software.

(d) Students will reach logical conclusions, predictions, or inferences.
   Students learn how to interpret numerical results from the statistical procedure that they are taught.
   Students also make statistical inferences from the data and predict numerical values from simple models.

(e) Students will assess the reasonableness of their conclusions.
   Students will learn how to assess the fit of simple models to the data, and how different criteria for statistical hypothesis test affect conclusions.