

University of Wisconsin-Milwaukee – Spring 2020

**INTRODUCTION TO STATISTICAL THINKING IN SOCIOLOGY (SOCIOLOGY 261)
Online**

Instructor: Alexander Bryan

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Email is the best way to get in touch with me. This is an online class, and I will use email as a way of communicating with the class, clarifying assignments and letting you know about updates to the material, so be sure to regularly check your email and make sure my emails aren't sorted into junk mail. I aim to respond to student e-mail within 24 hours, and 48 hours on 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.

In-person Office Hours

Office: Bolton 772

Tuesday: 2:30 pm – 4:00 pm

Wednesday: 1:00 pm – 2:30 pm

1) Prerequisites

1. Sociology 101 OR sophomore standing.
2. Satisfaction of the Quantitative Reasoning A general education requirement. The course involves lots of arithmetic and mathematical symbols and some basic algebra, but lectures will review any math you need to know for the course. You should also be able to use a calculator.

3. Because this is an online course, you must be familiar with the Canvas learning and have basic computer literacy. Canvas help for UWM students can be found at <https://uwm.edu/canvas/students/> (Links to an external site.)
4. You must be able to **EITHER** visit the UWM campus to use SPSS software (most previous students have chosen this option) **OR** purchase and install SPSS on your own computer. See section **5) SPSS software** below for more details including purchasing information.
5. You must be able to scan hand-written calculations and answers to assignments when necessary, and save multiple scanned pages into one PDF file. Scanners are available at the campus computer labs for free, and for a minimal charge at business centers such as Fedex Office, Print and Ship Centers. Android and IOS both have scanner apps available, such as Scanner Pro (IOS) and Camscanner (Android), among others. Be sure to figure out one way of submitting handwritten assignments online as a single PDF (smallpdf.com and ilovepdf.com are good free tools for this).

2) Course Objectives

Introduction to data analysis in sociological research. Students will learn a lot of statistical methods, 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 calculator and using 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.

3) Course Format

The course is conducted entirely online on Canvas. Please note that this is **not** a U-pace course, so you are not able to set your own deadlines. Instead I set the pace of the course by posting lectures and assignments at least a week before the due dates, adhering to the schedule (section 15 below).

4) Recommended Textbook

We will mostly rely on the lecture and SPSS instruction videos, but students who want an additional resource should purchase *Social Statistics for a Diverse Society* by Frankfort-Nachmias and Leon-Guerrero, Pine Forge Press. You can find this through the campus book store or online, and keep in mind that you don't need the most recent edition of this. I've listed book chapters by the corresponding lectures in the course schedule.

5) SPSS Software

You need to have access to SPSS for the completion of three statistics "lab" assignments. SPSS is a statistical software program that calculates statistics from a data set. SPSS is a good skill to learn, and is used in various fields including social sciences, business, health, criminal justice, and social work.

While usage of this program is mandatory for this course, you do not need to purchase this program if you are willing to use computers on campus in the lab, library, or Union. I strongly recommend this option if possible, because we will have only three SPSS assignments. For computer lab locations on campus and real-time availability, go to http://www4.uwm.edu/technology/authenticated/computer_labs/campus/ (Links to an external site.).

Otherwise, you can purchase access to the program for six months at quite a reasonable price (around \$35). There are several official authorized vendors. For example:

<http://studentdiscounts.com/spss.aspx?gclid=CKyfzayngtYCFQ1ufgodFtYH0A> (Links to an external site.)

On this page, you see different versions of SPSS. I recommend SPSS 25, or if you get SPSS 26, to use the classic interface, instead of the optional new one (nicer looking but a work in progress). The labs campus labs have SPSS 26, and use the classic interface which looks the same as 25, so SPSS instruction will be in version 25, or the classic interface if you have version 26. On the page linked above, look for the following licenses:

IBM SPSS Statistics Grad Pack 25.00 Base Download – Win or Mac – 6-month license (\$35.95)

or

IBM SPSS Statistics Grad Pack 26.00 Base Download – Win or Mac – 6-month license (\$35.95)

Other purchasing options can be seen on IBM's GradPack page:

<https://www.ibm.com/us-en/marketplace/spss-statistics-gradpack/details#product-header-top> (Links to an external site.)

But all of the available licenses and prices should be similar. 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 contact IBM's SPSS support or the vendor from whom you purchased the software. They have technicians who can help you. Again, remember that you have the option of using the computers on campus rather than purchasing SPSS.

6) Course Requirement Overview

There are 9 essential requirements for this course:

1. Read the syllabus carefully. If you're not familiar with Canvas, visit the Canvas tutorial page (<https://uwm.edu/canvas/students/>).
2. Watch and take notes on videos of lectures and SPSS (Lab) instructions, following the course schedule (see the last section of the syllabus for the course schedule), watching a video multiple times if necessary, to understand the material. Lecture videos, notes and SPSS demonstrations for each of 3 units are posted in "modules" on CANVAS, and are accessible from the class home page. Do not skip any videos, because this material builds on itself. It is very important to follow the course schedule and lecture videos.
3. Study lecture notes and work on your own on the examples used in the videos.

4. Ask questions via email or if necessary visit office hours. Be sure to allow as much time as possible before an assignment is due to ask questions
5. Regularly (a few times each week) monitor and read CANVAS announcements AND check your UWM e-mail account for any messages about the course.
6. Complete and submit lecture (hand-calculation) and lab (SPSS) assignments on CANVAS by the due dates (see the course schedule below). Submit lecture assignments as PDF files on the assignment page on Canvas (See section 9). The labs can be word documents, but you'll also need to submit an SPSS data file (.sav) (see section 10).
7. Read the feedback that you get on your assignments and ask questions if you have any. The aim of the feedback is to help you correct any mistakes or misconceptions before you see the material again on the unit's test.
8. Work on practice and review questions posted in the unit modules in CANVAS (no need to hand in your answers for practice and review questions).
9. Complete and place the three tests in CANVAS by the due dates (see section **15) Course Schedule** below). Test submissions work the same way as lecture assignments, submit a PDF file with your work to the test page on Canvas (See section 11).

7) Grading

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

Test 1: 20%

Test 2: 20%

Test 3: 20%

5 Lecture (hand calculation) assignments: 25% (5% each)

3 Lab assignments: 15% (5% each)

8) Letter Grade Conversion

A (93-100)

A- (90-92.9)

B+ (87-89.9)

B (83-86.9)

B- (80-82.9)

C+ (77-79.9)

C (73-76.9)

C- (70-72.9)

D+ (67-69.9)

D (60-66.9)

F (0-59.9)

9) Lecture Assignments (Hand-calculation)

There will be 5 hand-calculation (with a calculator) homework assignments (under “Lecture Assignments” in CANVAS). Feedback will be given on a per-student basis, and will be accessible on the assignment pages once the assignments are graded. Students are not allowed to use SPSS for lecture assignments and are expected to use a calculator instead. To ensure this, I will only accept scanned, hand-written calculations for the lecture assignments.

If students have questions on these assignments, I can help during my office hours, or via email for simpler questions. However, students may not copy other students' answers (which can result in identical wording, duplication of unique calculation mistakes, etc.. Teachers generally know what to look for). 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.

How to submit lecture assignments: Since you are required to show all steps of hand-calculation in the lecture assignments, your answers will be hand-written.

- Scan the hand-written answers.
- Save the scanned pages in one PDF file, and submit the PDF file via CANVAS. Students may need to combine multiple pages into one PDF file. If your scanner or camera software/app doesn't save directly to a PDF format, you can export images as PDFs using most image editing software, or use free online tools such as "smallpdf.com" and "ilovepdf.com." **Make sure that the PDF document is readable and that the pages are in the correct order before you submit it.**

Assignments with the following formatting issues will not be accepted:

- Submitting **typed** answers. Some assignments will require drawn diagrams, and most will require equations with Greek lettering. Word processors are the wrong tool for this, and are generally bad for writing equations and formulas, so showing your work is more difficult and students tend to make too many mistakes.
- Submitting **multiple** PDF files (as mentioned above, multiple pages should be combined into one PDF file).
- Submitting in a file format other than PDF, such as .DOC or .JPG.

- Submitting an unreadable file.
- Submitting via email or any means other than through CANVAS.

10) Lab (SPSS) Assignments

There will be 3 lab (SPSS) homework assignments. For the lab assignment, students will use SPSS to calculate various statistics and make various interpretations of results that appear in the SPSS output.

Students can ask questions about these assignments during office hours, or via email for simpler questions. Again, 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.

How to submit lab (SPSS) assignments: You can copy and paste SPSS output into Word, and then in the same document also type your answers to any questions asked in the assignment. Then you can save the Word document, and submit the Word file via the dropbox. I also require that you submit the data file (.sav) from SPSS, so by the due date for each SPSS assignment students must submit both files (Word document and .sav data) via the CANVAS dropbox. For Mac users, you may have to take a screenshot of the SPSS output instead of copy/paste-ing, but other than that the process should be the same.

11) Tests

There will be 3 tests, each involving hand-calculation (using a calculator, but write out the steps) and interpretation problems. The tests **will not** include any questions on how to use SPSS. Exam

questions will appear in CANVAS by 11:30 am on the dates listed in the course schedule, and you will have two and a half days to complete them.

Exams are open-note but should be entirely your own work. Getting help from anyone on the test, including discussing test questions, is considered academic misconduct. During the active test period, I can help clarify questions, but otherwise students are not allowed to ask me related to class materials or how to solve the problems (you are encouraged to ask questions related to class materials before the test is assigned). All students involved in academic misconduct will receive an F for their course grade and will be reported to University authorities. See the academic misconduct section below for details.

How to submit exams (basically the same process as submitting lecture assignments): Since you are required to show all steps of hand-calculation in the exams, your answers will be hand-written, just like lecture assignments.

- Scan the hand-written answers.
- Save the scanned pages in one PDF file, and submit the PDF file via CANVAS. Students need to combine multiple pages into one file PDF before submitting. **Make sure that the PDF document is readable and that the pages are in the correct order before you submit it.**

Tests with the following formatting issues will not be accepted:

- Submitting **typed** answers for hand calculations (Again, word processors are generally bad for showing calculations and writing out formulas and equations).
- Submitting **multiple** PDF files (as mentioned above, multiple pages should be combined into one PDF file).
- Submitting in a file format other than PDF, such as .DOC or .JPG.

- Submitting an unreadable file.
- Submitting via email or any means other than via CANVAS.

12) Estimated Time Commitment

General university guidelines state that a three-credit course should require a time commitment of 144 hours. The exact time commitment will vary by student and week. My expectation is that students will spend approximately 10% of the time watching lectures, 25% reading and reviewing lecture notes, posted lecture slides, and posted practice problems and other review material; 30% of the time on calculation and interpretation exercises; 20% of the time on computer-based SPSS exercises; and 25% of the time on tests

13) Late Submission, and Makeup Tests and Assignments

Students are required to submit assignments and tests before the listed due dates. Computer, scanner, and software issues are **NOT** valid reasons to request makeup tests and assignments or due date extensions, as these should be worked out before the first assignment is due. To avoid those issues, students are encouraged to work on and hand in assignments and tests early. Late assignments will be given a penalty of 10% per day late, with a maximum of half-credit after a week (which is still better for your grade than missing)

Illness and other emergencies

Makeup tests and assignments are allowed in the case of illness or some other emergency (for example, jury duty, death in the family, military service). To be considered for makeup tests and assignments, the student must present appropriate documentation as soon as possible (such as a doctor's note, obituary, a letter from judge, military orders). Please note that not all possible reasons for a makeup will be accepted (for instance, a family vacation is not an acceptable reason). Since the course is conducted entirely online, job-related reasons will NOT be accepted.

Religious observances

Makeup tests and assignments are allowed in the case of religious observances. The university policy requires students to notify the instructor, within the first three weeks of the beginning of classes, of the specific days or dates on which he or she will request relief from an examination or academic requirement.

14) Academic Misconduct

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 tests 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.

15) Course Schedule

Important due dates are highlighted. Chapters refer to chapters in the optional text.

Unit 1:

The What and the Why of Statistics (Chapter 1) – Watch the “Research Methods” video and study the “Research Methods” lecture notes.

Frequency Distributions (Chapter 2) – Watch the “Frequency Distribution” video. Study the “Frequency Distribution” lecture notes and work on the examples on your own.

Measures of Central Tendency (Chapter 4) - Watch the “Measures of Central Tendency” video. Study the “Measures of Central Tendency” lecture notes and work on the examples on your own.

Measures of Variability (Chapter 5) - Watch the “Measures of Variability” video. Study the “Measures of Variability” lecture notes and work on the examples on your own.

Lecture (Hand-calculation) HW 1-A - due by 11:59 pm on 2/4 (Tues)

SPSS Instruction on Descriptive Statistics – Watch the “SPSS-Descriptive Statistics” video.

Lab (SPSS) HW 1 - due by 11:59 pm on 2/11 (Tues)

Introduction to Probability, Probability Tree, and Discrete Probability Distribution (relies on class notes) – Watch the “Probability” video. Study the “Probability” lecture notes and work on the examples on your own.

Lecture (Hand-calculation) HW 1-B – due by 11:59 pm on 2/18 (Tues)

Review for Test 1 – Work on the Review Questions for test 1 and self-grade against the solutions (no need to turn in your answers).

Test 1 – assigned on 2/24 (Mon) at 11:30 am and due by 11:59 pm on 2/26 (Wed)

Unit 2:

The Normal Probability Distribution (Chapter 6) – Watch the “Normal Distribution” video. Study the “Normal Distribution” lecture notes and work on the examples on your own. *Many students find this section rather difficult, so be sure to spend sufficient time on this topic.*

Practice for Normal Distribution – Work on the practice questions for the normal distribution and self-grade against the solutions (no need to turn in your answers).

Lecture (Hand-calculation) HW 2-A – due by 11:59 pm on 3/11 (Tues)

3/15-3/22 - Spring break

SPSS Instruction on Normal Distribution – Watch the “SPSS-Normal Distribution” video.

Lab (SPSS) HW 2 - due by 11:59 pm on 3/24 (Tues)

Sampling and Sampling Probability Distributions (Chapter 7) – Watch the “Sampling Distribution” video under “Lectures” in Canvas. Study the “Sampling Distribution” lecture notes and work on the examples on your own.

Practice for Sampling Distribution – Work on the practice questions for the sampling distribution posted under “Review and Practice Questions and Solution” in Canvas and self-grade against the solutions (no need to turn in your answers).

Lecture (Hand-calculation) HW 2-B - due by 11:59pm on 3/31 (Tues)

Review for Test 2 -Work on Review Questions for test 2 and self-grade against the solutions (no need to turn in your answers).

Test 2 – assigned on 4/6 (Mon) at 11:30am and due by 11:59 pm on 4/8 (Wed).

Unit 3:

Hypothesis Testing (Chapter 9) – Watch the “Hypothesis Testing” video under “Lectures” in Canvas. Study the “Hypothesis Testing” lecture notes and work on the examples on your own.

Correlation and Regression (Chapter 13) – Watch the “Correlation and Regression” video under “Lectures” in Canvas. Study the “Correlation and Regression” lecture notes and work on the examples on your own.

Lecture (Hand-calculation) HW 3 – due by 11:59 pm on 4/21 (Tues)

SPSS Instruction on Correlation and Regression – Watch the “SPSS-Correlation and Regression” video.

Lab (SPSS) HW 3 - due by 11:59 pm on 4/28 (Mon)

Review for Test 3 -Work on Review Questions for Test 3 and self-grade against the solutions (no need to turn in your answers).

Test 3 – assigned on 5/4 (Mon) at 11:30am and due by 11:59 pm on 5/6 (Wed).

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: http://www4.uwm.edu/secu/news_events/upload/Syllabus-Links.pdf (Links to an external site.)

Accommodations for 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. It is expected that a statement be placed on your syllabus informing students to contact you to arrange needed accommodations. A sample syllabus statement can be found here: <https://uwm.edu/arc/wpcontent/uploads/sites/97/2015/08/Recommended-Syllabus-Statement.pdf>. (Links to an external site.)

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> (Links to an external site.)

Students called to active Military Duty. Accommodations for absences due to call-up of reserves to active military duty are found at the following: <https://uwm.edu/active-duty-military/> (Links to an external site.)

Incompletes. You may be given an incomplete if you have carried a course successfully until near the end of the semester but, because of illness or other unusual and substantiated cause beyond your control, have been unable to take or complete the final examination or to complete some limited amount of course work. An incomplete is not given unless you prove to the instructor that you were prevented from completing the course for just cause as indicated above. The conditions for awarding an incomplete to graduate and undergraduate students can be found at the following: https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf (Links to an external site.)

Discriminatory Conduct (such as sexual harassment). 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://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf (Links to an external site.)

Academic Misconduct. 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 students cheating on exams or plagiarism can be found at the following: <https://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/> (Links to an external site.)

Complaint Procedures. Students may direct complaints to the Sociology Department Chair or the Associate Dean for Social Sciences in the College of Letters & Sciences. If the complaint allegedly violates a specific university policy, it may be directed to the Sociology Department Chair, the Associate Dean for Social Sciences in the College of Letters & Sciences, or to the appropriate university office responsible for enforcing the policy. Policies may be found at:

https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf (Links to an external site.)

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 sociology department chairperson or the Academic Dean of the College of Letters & Science. Procedures for undergraduate student grade appeal can be found at:

<https://uwm.edu/letters-science/advising/answers-forms/policies/appeal-procedure-for-grades> (Links to an external site.)

Procedures for graduate student grade appeal can be found at

<https://uwm.edu/graduateschool/appealing-academic-decisions/> (Links to an external site.)

Final Examination Policy. Policies regarding final examinations can be found at the following:

<http://www4.uwm.edu/secu/docs/other/S22.htm> (Links to an external site.)

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