Sociology 261: Introduction to Statistical Thinking in Sociology

Fall 2022
Lecture: Tuesdays and Thursdays 12:30-1:20pm in Lubar S171
Lab: Thursdays 1:30-2:20pm in Bolton 293

Theresa Beaumier
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Office Hours: Tuesdays 1:20-3:20pm
Office: Bolton 770

Course Description
From casual news watchers to businesspeople and academics, we’re all confronted with a myriad of statistics throughout our lives. We rely on statistics to learn about our world, shape our opinions, and inform our professional decisions. Sociologists use statistics to study how society works, analyzing data on a wide array of topics, such as health, gender, crime, social movements, economic inequalities, education, race, and public opinion. In this course, we will build a basic statistics toolkit, including calculating and interpreting statistics and becoming familiar with SPSS software. We will also challenge the notion of statistics as “objective,” considering the decisions that researchers make when analyzing and presenting information and discussing how to critically question the information that we hear. We will focus on examining topics that are important to sociologists and other social scientists, but the content of this class is relevant to many disciplines.

Course Learning Objectives
By the end of the semester, students will be able to:
- Critically evaluate statements about research findings.
- Calculate descriptive statistics for numeric and categorical variables.
- Conduct hypothesis tests, using appropriate language to express findings.
- Calculate and interpret the relationship between two variables using correlation and linear regression.
- Utilize SPSS software to find the statistics learned in this class.
- Apply statistical knowledge to answer questions about data.

Prerequisites
1. Sociology 101 OR sophomore standing
2. A satisfactory grade in General Education Requirement Quantitative Literacy A (GER QL-A) (e.g. Math 102, 103, 105, 108, or 111)
Successful Completion of Sociology 261

- Meets the UWM General Education Requirement Quantitative Literacy – B (GER QL-B)
- Is required for the BA in Sociology and the BS in Criminal Justice
- Meets the introductory statistics requirement for the Quantitative Social Data Analysis (QSDA) certificate program

UWM QL-B Learning Goals 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 a variety of mathematical formulas and equations, learn how to set up statistical hypotheses, and learn simple models for population characteristics and relationships between variables.*

(b) Students will evaluate the validity of these models and hypotheses.

*Students will learn methods for statistical hypothesis testing and estimating simple models.*

(c) Students will analyze and manipulate mathematical models using quantitative information.

*Students will learn both hand calculation and use of statistical software.*

(d) Students will reach logical conclusions, predictions, or inferences.

*Students will learn how to interpret numerical results from the statistical procedures that they are taught. Students will also learn to make statistical inferences from 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 data, and how different criteria for statistical hypothesis tests affect conclusions.*

UW System Shared Learning Goals

UW System Shared Learning Goals identify five learning objectives: 1) Knowledge of human cultures and the natural world, 2) critical and creative thinking skills, 3) effective communication skills, 4) intercultural knowledge and competence, and 5) individual, social and environmental responsibility. QL-B courses satisfy 2) critical and creative thinking skills including inquiry, problem solving, and higher order qualitative and quantitative reasoning. Sociology 261 satisfies this learning goal by teaching students how to calculate statistics with formulas and statistical software, interpret the results of their calculations, make predictions, and perform hypothesis testing.

Assessment Plan

Students’ scores on Lecture Homework 3 (normal distribution with Z-score), Lecture Homework 5 (hypothesis testing), and Lecture Homework 6 (correlation and regression) will be aggregated and used to assess class achievement with respect to the above learning goals. (Note that here “assessment” refers to the University’s regular assessment of GER courses, not to grading of individual students in the course. Students’ individual grades are determined through the course grading procedures described below.)

Course Materials

- **SPSS**: Students must have access to SPSS software. You may use SPSS software on campus computers or download it from the [UWM SoftwareShop](#).
• **Calculator:** A basic calculator is required for this course. The calculator will be used to add, subtract, divide, multiply, and take square roots. Students will be required to bring a calculator to class and to use during exams. Cellphones will *not* be allowed during exams.

• **Optional Textbook:** There is no required textbook for this course. However, students who wish to reference a textbook may access the following free resource: Online Statistics: An Interactive Multimedia Course of Study (http://onlinestatbook.com/).

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**Panther Community Health and Safety Standards**

UWM has implemented 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 Policy](#), which was 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:

- UWM recommends that all individuals visiting UWM facilities wear face coverings while indoors.
- UWM recommends getting vaccinated for COVID-19 and getting the most recent booster shot available to you.
- UWM requires that you check daily for COVID-19 symptoms and not come to campus if you are feeling sick. If you are feeling sick, get tested for COVID-19 and quarantine until symptoms subside. Use the [CDC Quarantine and Isolation Calculator](#) to determine next steps.
- If you test positive for COVID-19, UWM requires that you self-report at the [Dean of Students Reporting Form](#). Use the [CDC Quarantine and Isolation Calculator](#) to determine next steps.

Additional details about student and employee expectations can be found on the [UWM COVID-19 webpage](#).

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**Class Structure**

This class will meet twice a week for lecture in Lubar S171 (Tuesdays and Thursdays 12:30-1:20) and once a week for lab in Bolton 293 (Thursdays 1:30-2:20pm).

Students are expected to attend all lecture and lab sessions, unless ill or required by the University to stay home and isolate. Students who miss class are responsible for making up work by reviewing class materials posted on the course Canvas site, requesting notes from other students in the course, and contacting the instructor with any questions about the material they missed.

All students are expected to review their notes following each class session. Assignment deadlines are listed in the course schedule below.

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**Grades**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percent</th>
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<tbody>
<tr>
<td>10 quizzes (of 11)</td>
<td>20%</td>
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<tr>
<td>8 homework assignments (of 9)</td>
<td>32%</td>
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<td>3 exams (of 4)</td>
<td>48%</td>
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**Grading Scale**

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<th>Upper Limit</th>
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<td>93-100</td>
<td>B+</td>
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<td>B</td>
<td>83-86</td>
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<td>90-92</td>
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<td>80-82</td>
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Quizzes
There will be 11 quizzes, but only your 10 highest scores will be counted. Quizzes will be completed on Canvas and will be due on Tuesdays at 11:59pm. They will be open notes. Quiz questions will focus on material covered during the previous week’s lecture and lab sessions, but they may also cover older material.

Following each quiz, students may optionally complete quiz corrections, for a chance to earn up to half a point for each question they got wrong. Corrections for calculations must show all steps and corrections for multiple choice questions must provide an explanation of the correct answer. Students will submit a hard copy of their corrections in class on the Thursday immediately following the quiz. Late corrections will not be accepted.

Homework
There will be 9 homework assignments, but only your 8 highest scores will be counted. A hard copy of lecture homework assignments and an electronic copy (via Canvas) of lab homework assignments will be due at the beginning of lecture meetings (12:30pm) on the dates shown in the course schedule below.

Students who are unable to attend class on the day a lecture homework assignment is due should email photos of their homework assignment to the instructor prior to 12:30pm. See the late assignment policy below.

Late Assignments
It is important that students turn in all assignments on time. If you know that you will be unavailable on the day an assignment is due, please plan to submit it in advance. Quizzes and homework will be accepted up to three days late. The grade will be lowered by 5% (a half a letter grade) for each day (24 hours) they are late, beginning at the time the assignment is due. No assignments will be accepted after three days.

Exams
There will be 4 in-person exams (October 4th, November 8th, December 13th, and December 20th), but only your 3 highest scores will be counted. All exams will be closed book, meaning that students will not be allowed to access any class materials or other resources. The first three exams will cover only the most recent unit, and the final exam will be cumulative.

Exams will only be rescheduled if you email the instructor at least one week in advance with a valid reason that you cannot complete the exam on the assigned day. In situations where you cannot provide one week of notice, such as University-mandated isolation, you must notify the instructor as soon as possible. Be prepared to submit any documentation requested by the instructor to verify your valid reason for missing an exam. It is in your best interest to contact the instructor right away if you believe you may miss an exam at any point in the semester. Vacations and other travel will not be considered a valid reason for missing an exam.

Academic Misconduct
All coursework submitted must be your own work and cannot be copied from other students. You may not cheat or plagiarize. Students who do not follow the UWM academic honor code may fail an assignment or the entire course. Violations may be included in a student’s permanent academic record.

Credit Hours
The UW System indicates that “study leading to one semester credit represents an investment of time by the average student of not fewer than 48 hours” (UWS ACPS 4), meaning that you should spend at least 144 hours (3 x 48) on this three-credit course.
This class will require approximately:
- 2.5 hours per week attending lecture and lab
- 4.5 hours per week reviewing notes, taking quizzes, and completing homework assignments
- 2 hours per week preparing for exams

**Canvas**
You will need to access our course’s Canvas website throughout the semester. If you run into any technical issues with the Canvas site, please contact Canvas student support: [https://uwm.edu/canvas/students/?target=get-help](https://uwm.edu/canvas/students/?target=get-help).

**Contact Details**
I look forward to working with you this semester! Please check your UWM email at least once every weekday (Monday-Friday) for any information about the class. Be sure your Canvas account is set up to forward class announcements to your Outlook account.

I encourage you to visit me during office hours, which will be held on Tuesdays from 1:20-3:20pm in Bolton 770. If you are unavailable during that time, please email me to set up an appointment to meet in person or online. Additionally, you are always welcome to email me with questions. Please email me in advance of any due dates, as it may take me one or two business days to reply to you.

**Course Schedule**
This course schedule is subject to change at the discretion of the instructor. Students will be notified in advance of any changes.

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<thead>
<tr>
<th>Week</th>
<th>Chapter / Topic</th>
<th>Day</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>Class Introduction</td>
<td>Tuesday 9/6</td>
<td>1) Introduce yourself on Canvas and 2) take the course intro survey.</td>
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<td>Thursday 9/8</td>
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<td>2</td>
<td>Frequency Distributions / Measures of Central Tendency</td>
<td>Tuesday 9/13</td>
<td>Quiz 1 due on Canvas at 11:59pm</td>
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<td></td>
<td></td>
<td>Thursday 9/15</td>
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<td>3</td>
<td>Measures of Variability / Probability</td>
<td>Tuesday 9/20</td>
<td>Quiz 2 due on Canvas at 11:59pm</td>
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<td></td>
<td></td>
<td>Thursday 9/22</td>
<td>Lecture Homework 1 due in lecture at 12:30pm</td>
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<tr>
<td>4</td>
<td>Probability / Exam Review</td>
<td>Tuesday 9/27</td>
<td>Quiz 3 due on Canvas at 11:59pm</td>
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<td></td>
<td></td>
<td>Thursday 9/29</td>
<td>Lecture Homework 2 due in lecture at 12:30pm</td>
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<td></td>
<td></td>
<td>Lab Homework 1 due on Canvas at 12:30pm</td>
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<td>5</td>
<td></td>
<td>Tuesday 10/4</td>
<td>Exam 1</td>
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<tr>
<td>5</td>
<td>Normal Distribution</td>
<td>Thursday 10/6</td>
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<tr>
<td>6</td>
<td>Normal Distribution</td>
<td>Tuesday 10/11</td>
<td>Quiz 4 due on Canvas at 11:59pm</td>
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<td></td>
<td>Thursday 10/13</td>
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<tr>
<td>7</td>
<td>Sampling and Sampling Distributions</td>
<td>Tuesday 10/18</td>
<td>Quiz 5 due on Canvas at 11:59pm</td>
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### 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](https://uwm.edu/secu/wp-content/uploads/sites/122/2016/12/Syllabus-Links.pdf)

1. Students with disabilities. Notice to these students should appear prominently in the syllabus so that special accommodations are provided in a timely manner. [http://uwm.edu/arc/](http://uwm.edu/arc/)

2. Religious observances. Accommodations for absences due to religious observance should be noted. [https://apps.uwm.edu/secu-policies/storage/other/SAAP%201-2.%20Accommodation%20of%20Religious%20Beliefs.pdf](https://apps.uwm.edu/secu-policies/storage/other/SAAP%201-2.%20Accommodation%20of%20Religious%20Beliefs.pdf)


4. 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

5. 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. https://apps.uwm.edu/secu-policies/storage/other/SAAP%205-1.%20Discriminatory%20Conduct%20Policy.pdf

6. 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/.

7. 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. https://uwm.edu/deanofstudents/academic-misconduct/

8. 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

9. 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%2010.%20Grade%20Appeals%20by%20Students.pdf

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


12. 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

Updated 08/2021