

SOC 351 Social Statistics (Online) Spring 2021

Instructor: M. David Chunyu, Ph.D., Associate Professor of Sociology
Class Meeting: Th, 2:00PM – 3:15PM, on Zoom (Meeting ID: 956 5802 4219 Passcode: Median\$)
Lab: Online and asynchronous
Office Hours: Tu Th, 9:00AM – 10:00AM, or by appointment, on Zoom (Meeting ID: 955 5088 1525 Passcode: officehrs1)
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E-mail: dchunyu@uwsp.edu (please put “SOC 351” in the email subject line)

Course Overview

This course provides a general introduction to statistical techniques for analyzing social science data. Familiarity with statistics is important for the informed citizen because many social policy debates center on the use of statistical information. Statistics is also a necessary tool for those interested in social research, an increasingly important source of employment opportunities for social science majors.

Students will learn techniques for summarizing data, examining relationships among variables, generalizing from samples to populations, and testing statistical hypotheses.

Learning activities of this course will include lectures, in-class exercises, lab activities, homework assignments, and exams.

The laboratory portion of the course is designed to complement the lectures by letting students gain hands-on experience carrying out various kinds of statistical exercises. The main activities will be computer-intensive and will take place in the UWSP remote computer lab. Students will learn how to use SPSS Statistics, a widely used statistical software for social scientists. We will mainly be using SPSS to analyze data from the General Social Survey (GSS).

This course is required for Sociology majors.

For Social Work majors, this course also provides them with an opportunity to engage in practice-informed research and research-informed practice, which is one of the Social Work core competencies.

Social Work Competency

All aspects of this course help students work toward the Council on Social Work Education (CSWE) competency of “**practice-informed research and research-informed practice**” for accredited social work programs:

➤ ***Engage in practice-informed research and research-informed practice.***

Social workers understand quantitative and qualitative research methods and their respective roles in advancing a science of social work and in evaluating their practice. Social workers know the principles of logic, scientific inquiry, and culturally informed and ethical approaches to building knowledge. Social workers understand that evidence that informs practice derives from multi-disciplinary sources and multiple ways of knowing. They also understand the processes for translating research findings into effective practice.

Course Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate appreciation for when, why, and how social statistics are used;
2. Articulate the basic concepts and methodological procedures of data analysis, as well as the logic underlying those procedures;
3. Process, analyze, and interpret data for the social sciences [e.g., the General Social Survey (GSS) data];
4. Use statistical software (e.g., SPSS) to conduct basic data analysis;
5. Apply critical thinking to engage in analysis of quantitative research methods and research findings;
6. Use and translate quantitative research evidence to inform and improve practice, policy, and service delivery;
7. Use practice experience and theory to inform scientific inquiry and research.

Prerequisites

MATH 90 or equivalent, and SOC 101; or instructor consent.

Generally if you can add, subtract, multiply, and divide, and follow simple rules of logical deduction, then you have the tools necessary to succeed in this course. ***However, it is imperative that you keep up with the progress of the course at all times!*** Due to the extremely technical and cumulative nature of this course, once you fall behind, it will be very difficult to catch up. Therefore, regular attendance, meticulous notes, and timely completion of class and lab tasks and assignments are essential.

Course Structure

This course will be delivered entirely online. Most of the coursework will be delivered through the course management system Canvas. You will use your UWSP account to login to the course from the [Canvas Login Page](#). If you have not activated your UWSP account, please visit the [Manage Your Account](#) page to do so. In addition, students shall also participate in Zoom class meetings. Instructions on how to install and use Zoom are available at <https://www.uwsp.edu/infotech/Pages/Tutorials/Zoom/Zoom.aspx>

This course consists of 13 weeks of substantive learning. Each week's learning consists of the following components:

1. Asynchronous lecture: Students shall study the lecture slides and video in Canvas. ***Students must complete this task before Thursday 2:00PM in order to be prepared for the Zoom class meeting.***
2. Asynchronous lab: Students shall follow the lab video tutorials in Canvas and complete the same activities through the UWSP remote computer lab at remotelab.uwsp.edu [see "Grading" → "Homework Assignments (45 points)" for more information on the UWSP remote lab]. ***Students must also complete this task before Thursday 2:00PM in order to be prepared for the Zoom class meeting.***
3. Synchronous Zoom class meeting: On every Thursday 2:00PM-3:15PM, the class shall meet live on Zoom (Meeting ID: 956 5802 4219 Passcode: Median\$). During the Zoom class meetings, the instructor will mainly lead students to work on exercises and practice problem solving; the instructor can also answer students' questions during the Zoom sessions. However, the Zoom class meetings will not be used for the instructor's lectures or labs. ***Therefore, it is essential that students must have already completed the aforementioned task 1 (asynchronous lecture) and task 2 (asynchronous lab) in advance.*** The Zoom class meetings will be recorded and shared with the class afterwards, so students are advised to be discreet about their own appearance and behavior as well as their background environment when using their webcams so that they can protect their privacy and also minimize distractions during the Zoom meetings.
4. Homework assignment: Each week students will receive a new homework assignment. The due date for the weekly assignments shall always be Tuesday in the following week [see "Grading" → "Homework Assignments (45 Points)" for more information].

In addition to the weekly substantive learning, there will be three (3) exams throughout the semester: two midterm exams and one final exam [see "Grading" → "Exams (55 Points)" for details].

Additional Communication Expectations for Students

- Professional and respectful tone and civility are used in communicating with fellow learners and the instructor.
- Written communication, both formal and informal, uses Standard English rather than popular online abbreviations and regional colloquialisms.
- Spelling and grammar are correct.

Grading

A student's final course grade is based entirely on the "TOTAL POINTS" s/he has earned over the semester. The "TOTAL POINTS" are simply the total crude points a student has accumulated from assignments and exams, plus optional bonus points if applicable, and **summation** is the only mathematical operation used for calculating a student's "TOTAL POINTS". Thus, no percentage, proportion, division, or any "out of (a base number)" concept is involved in the "TOTAL POINTS" calculation. (***Important note:*** *The "Total" column or other automatically generated columns in the "Grades" area of Canvas will NOT be used, because they reflect some sort of percentage calculation, which is inconsistent with the grading system of this course. Also see the "Grading Scale" section below.*)

A student's max total points consist of the following:

➤	<i>Homework Assignments</i>	<i>45 Points</i>
➤	<i>Exams</i>	<i>55 Points</i>
	❖ <i>1st exam</i>	<i>15 points</i>
	❖ <i>2n exam</i>	<i>20 points</i>
	❖ <i>Final exam</i>	<i>20 points</i>

Max Total = 100 Points

Homework Assignments (45 Points)

There will be weekly homework assignments throughout the semester. Some of the assignment tasks are about manual calculations, while others involve using a computer and the SPSS software to analyze real-world datasets.

Students can get access to the SPSS software by connecting their home computers to the UWSP remote computer lab at remotelab.uwsp.edu. Students can refer to the instructor's video tutorial in Canvas → "01/25 - 01/31: Introduction to the Course" module → "Lab: Introduction" on how to get connected to the UWSP remote lab. Additional information on the UWSP remote lab is available at <https://www.uwsp.edu/infotech/Pages/ComputerLabs/Remote-Lab.aspx>

All the needed datasets and documentation will be made available in Canvas → "Data" module.

All weekly assignments will be due on Tuesday in the following week.

Exams (55 Points)

There will be three (3) exams: two midterm exams and one final exam. All exams will be open-book exams. The exam questions will be based on lectures, reading, recorded videos, review exercises, lab activities, and assignments.

The first two exams will be given in the middle of the semester and the exam arrangements will be announced in advance. These two midterm exams may include multiple-choice questions, test problems, and SPSS application problems. The first midterm exam is worth 15 points and the second midterm exam is worth 20 points.

The third and final exam will be given during the final exam week in Canvas. The final exam will consist of 50 multiple-choice questions and is worth 20 points.

To help students prepare for the exams, the instructor will post review exercises for each unit in Canvas. These review exercises are designed to help students digest and reinforce the class learning. Also importantly, these review exercises are very closely tied to the exams, so students are highly recommended to make good use of these review exercises when preparing for the exams.

Take careful note of the exam schedules, especially the date and time of the final exam, because the final exam schedule is usually not the same as the regular class meeting schedule. ***NEITHER EARLIER NOR MAKE-UP EXAMS WILL BE OFFERED EXCEPT IN DOCUMENTED CONFLICTS OR EMERGENCIES.***

Bonus Points (Optional)

There might be opportunities for students to earn extra credits/bonus points.

Grading Scale

Again, a student's final course grade is based entirely on the "TOTAL POINTS" s/he has accumulated over the semester. Thus, for calculating a student's "TOTAL POINTS", **summation** is the only mathematical operation used; that is, the instructor will simply add up all the points a student has earned from assignments and exams, plus optional bonus points if applicable. No percentage, proportion, division, or any "out of (a base number)" concept is involved in the "TOTAL POINTS" calculation. (***Important note:*** Again, the "Total" column or other automatically generated columns in the "Grades" area of Canvas will ***NOT*** be used, because they reflect some sort of percentage calculation, which is inconsistent with the grading system of this course.)

A student's "TOTAL POINTS" will then be converted into her/his final course grade according to the following scale:

A93.00 – 100.00 points

C.....73.00 – 76.99 points

A-.....90.00 – 92.99 points	C-.....70.00 – 72.99 points
B+.....87.00 – 89.99 points	D+.....67.00 – 69.99 points
B.....83.00 – 86.99 points	D.....60.00 – 66.99 points
B-.....80.00 – 82.99 points	F.....0.00 – 59.99 points
C+.....77.00 – 79.99 points	

Grade Posting

Students' grade points from assignments and exams, plus optional bonus points if applicable, will be posted in Canvas → “Grades” area as soon as they become available. A distinct grade item will also be created in Canvas → “Grades” area to show a student’s “TOTAL POINTS” s/he has accumulated over the semester. (***Important note:*** *One last time, the “Total” column or other automatically generated columns in the “Grades” area of Canvas will NOT be used, because they reflect some sort of percentage calculation, which is inconsistent with the grading system of this course. Please also see the preceding “Grading Scale” section for explanation.*) It is a student’s own responsibility to check Canvas regularly and to be kept informed of her/his own grade status.

Textbook

The following book is required and has been ordered at the university store (please visit <https://www.uwsp.edu/centers/store/Pages/default.aspx> to get the spring 2021 text rental information):

Chava Frankfort-Nachmias, Anna Leon-Guerrero, and Georgiann Davis. 2020. *Social Statistics for a Diverse Society*. 9th Edition. SAGE Publications, Inc.

Students can also access the textbook supplements (just the supplements, not the textbook) at the student study website: <https://edge.sagepub.com/frankfort9e/student-resources>

Additional Course Materials

Additional course materials (the instructor’s lecture slides, recorded videos, datasets and related documentation, review exercises, assignments, etc.) will be made available in Canvas.

Additional Required Device

Each student shall get a calculator with the square and square-root functions. This can be either a conventional standalone calculator like a regular scientific calculator, or a calculator application/app on a computer/tablet/mobile device. A graphing calculator won’t be necessary.

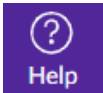
The calculator will be used for class exercises, lab activities, homework assignments, and exams.

Special note: For the best experience with the UWSP remote computer lab remotelab.uwsp.edu, students are recommended to use a PC (with a Windows operating system) rather than a Mac/iPad (with an Apple operating system), because there has been reports that sometimes Mac/iPad users may have difficulty getting access to the UWSP remote lab.

UWSP Technology Support

- Visit with a [Student Technology Tutor](#)
- Seek assistance from the [IT Service Desk](#) (Formerly HELP Desk)
 - IT Service Desk Phone: 715-346-4357 (HELP)
 - IT Service Desk Email: techhelp@uwsp.edu

Canvas Support

Click on the  button in the global (left) navigation menu and note the options that appear:

Support Options	Explanations
<p>Ask Your Instructor a Question Submit a question to your instructor</p>	Use Ask Your Instructor a Question sparingly; technical questions are best reserved for Canvas personnel and help as detailed below.
<p>Chat with Canvas Support (Student) Live Chat with Canvas Support 24x7!</p>	Chatting with Canvas Support (Student) will initiate a <i>text chat</i> with Canvas support. Response can be qualified with severity level.
<p>Contact Canvas Support via email Canvas support will email a response</p>	Contacting Canvas Support via email will allow you to explain in detail or even upload a screenshot to show your particular difficulty.
<p>Contact Canvas Support via phone Find the phone number for your institution</p>	Calling the Canvas number will let Canvas know that you're from UWSP; phone option is available 24/7.
<p>Search the Canvas Guides Find answers to common questions</p>	Searching the Canvas guides connects you to documents that are searchable by issue. You may also opt for Canvas video guides .

<p>Submit a Feature Idea Have an idea to improve Canvas?</p>	<p>If you have an idea for Canvas that might make instructions or navigation easier, feel free to offer your thoughts through this Submit a Feature Idea avenue.</p>
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All options are available 24/7; however, if you opt to email your instructor, s/he may not be available immediately.

- Self-train on Canvas through the [Self-enrolling/paced Canvas training course](#)

Protecting your Data and Privacy

UW-System approved tools meet security, privacy, and data protection standards. For a list of approved tools, visit this website. <https://www.wisconsin.edu/dle/external-application-integration-requests>

Tools not listed on the website linked above may not meet security, privacy, and data protection standards. If you have questions about tools, contact the UWSP IT Service Desk at 715-346-4357.

Here are steps you can take to protect your data and privacy.

- Use different usernames and passwords for each service you use
- Do not use your UWSP username and password for any other services
- Use secure versions of websites whenever possible (HTTPS instead of HTTP)
- Have updated antivirus software installed on your devices

Expected Instructor Response Times

The instructor will attempt to respond to student emails within 24 hours. If you have not received a reply from me within 24 hours please re-send your email.

Note: If you have a general course question (not confidential or personal in nature), please post it to the Course Q & A Discussion Forum found on the course homepage. I will post answers to all general questions there so that all students can view them. Students are encouraged to answer each other's questions too.

The instructor will attempt to reply to and assess student discussion posts within 48 hours of discussions closing.

The instructor will attempt to grade assignments within a week, however longer assignments may take me longer to read and assess.

Online Classroom Etiquette

The classroom is a learning environment and an academic community. All members of this community, students and instructor alike, have a special obligation to preserve an atmosphere conducive to the freedom to teach and to learn. What is essential to preserve such freedom is a culture of respect that honors the rights, safety, dignity, and worth of every individual. For that reason, all members of this community are expected to show courtesy, civility, and respect for one another.

Part of that obligation to maintain a positive learning environment is to ensure that the behavior of any individual does not disrupt the process of teaching and learning. Accordingly, students shall do their best to minimize disruptions that can distract from their own learning and that of their peers.

The instructor reserves the right to mute a student or restrict a student's access to Zoom class meetings if the student behaves in a way that interferes with the academic or administrative functions of the class.

Diversity and Inclusion

UWSP supports an inclusive learning environment where diversity and individual differences are understood, respected, and appreciated. These differences include race/ethnicity, gender, class, political view, religion, color, national origin, sexual orientation, disability, age, marital or family status, as well as personality, learning styles, and life experiences. It is these very differences among us that enrich our learning environment and make us strong. We expect that students, faculty, administrators, and staff will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, experiences, and worldviews may be different from their own.

Disabilities/Special Needs

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and/or special needs. If you have disabilities/special needs affecting your participation in the course and wish to have special accommodations, please contact the Disability and Assistive Technology Center (DATC) on the 6th floor of Albertson Hall (library) as soon as possible. DATC will then coordinate with me in helping you receive the proper accommodations and auxiliary aids. DATC can be reached at 715-346-3365 or datctr@uwsp.edu. You can also find more information here: <http://www.uwsp.edu/datc>.

Academic Support

If a student finds it difficult to keep up with the class progress at any point during the semester, s/he is recommended to seek help immediately from the instructor.

In addition, students may also use help from the tutor(s) at the Tutoring-Learning Center (TLC), depending on the availability of the tutor(s). TLC can be reached at 715-346-3568 or tlctutor@uwsp.edu. You can also find more information here: <http://www.uwsp.edu/tlc>. The tutoring arrangement is to be made strictly between a student and TLC staff and does not necessarily involve the instructor.

Academic Integrity

Academic integrity is central to the mission of this institution. Academic dishonesty in any form will not be tolerated and will receive disciplinary sanctions per the UWSP policies. The UWSP policies regarding student academic standards and disciplinary procedures can be found here:

<https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx>. If I observe academic misconduct, or if suspicions of academic dishonesty are reported to me, I will request that the identified parties to discuss the situation, and then the procedures set out in UWS/UWSP Chapter 14 will be followed.

(Continue to next page)

COURSE OUTLINE

DATES	TOPICS/ACTIVITIES	READING
Univariate Analysis		
01/25 – 01/31	<p><i>Introduction to the Course</i></p> <p><u>Key Topics:</u></p> <ol style="list-style-type: none"> 1. The Research Process 2. Independent and Dependent Variables 3. UWSP Remote Lab and SPSS 4. GSS Dataset and Codebook 	Chapter 1.
02/01 – 02/07	<p><i>Levels of Measurement</i></p> <p><u>Key Topics:</u></p> <ol style="list-style-type: none"> 1. Levels of Measurement 2. Discrete and Continuous Variables 3. Descriptive and Inferential Statistics <p><i>A Basic Math Review</i></p> <p><u>Key Topics:</u></p> <ol style="list-style-type: none"> 1. Inequality Notations 2. Square and Square Root 3. Order of Operations 4. Solving Linear Equations 	Chapter 1.
02/08 – 02/14	<p><i>Organization of Information</i></p> <p><u>Key Topics:</u></p> <ol style="list-style-type: none"> 1. Frequency Distributions: Frequencies, Proportions, and Percentages 2. Construction of Frequency Distributions by Level of Measurement 3. Grouped Data/Distributions: Stated Limits, Real Limits, Midpoints of Class Intervals 4. Cumulative Distributions 5. Rates 6. Reading Statistical Tables 	Chapter 2.

02/15 – 02/21 *Measures of Central Tendency* Chapter 3.

Key Topics:

1. Mean, Mode, Median
2. Percentiles
3. The Shape of a Distribution
4. Choosing an Appropriate Measure of Central Tendency

02/22 – 02/28 *Measures of Variability/Dispersion* Chapter 4.

Key Topics:

1. The Importance of Measuring Variability/Dispersion
2. IQV, Range, IQR
3. Variance and Standard Deviation
4. Choosing an Appropriate Measure of Variability/Dispersion

03/01 – 03/07 * 1st Midterm Exam *****

Bivariate Analysis

03/08 – 03/14 *Bivariate Tables/Cross-Tabulation for Categorical Variables* Chapter 9.

Key Topics:

1. Constructing a Bivariate Table
2. Analyzing a Bivariate Table
3. Properties of a Bivariate Relationship

03/15 – 03/21 *Regression and Correlation for Interval-Ratio Variables* Chapter 12.

Key Topics:

1. Linear Relationships
2. OLS Regression Line
3. R-Squared
4. Pearson's Correlation Coefficient (r)

* 03/22 – 03/28 NO CLASS! HAPPY SPRING BREAK!

Preparation for Inferential Statistics

03/29 – 04/04 *The Normal Distribution (Part I)* Chapter 5.

Key Topics:

1. Properties of the Normal Distribution
2. Areas under the Normal Curve
3. Standard (*Z*) Scores
4. The Standard Normal Table
5. Problem Solving

04/05 – 04/11 *The Normal Distribution (Part II)* Chapter 5.

Key Topics:

1. Problem Solving Continues

04/12 – 04/18 * 2nd Midterm Exam *****

Inferential Statistics

04/19 – 04/25 *Sampling and Sampling Distributions* Chapter 6.

Key Topics:

1. Population and Sample
2. Probability Sampling
3. The Sampling Distribution
4. The Sampling Distribution of the Mean
5. The Central Limit Theorem

04/26 – 05/02 *Estimation* Chapter 7.

Key Topics:

1. Estimation Defined
2. Confidence Level and Confidence Interval
3. Confidence Intervals for Population Means
4. Confidence Intervals for Population Proportions

05/03 – 05/14

Testing Hypotheses

Chapter 8.

Key Topics:

1. The Logic of Hypothesis Testing
2. The Five Step Model in Hypothesis Testing
3. One-Tailed vs. Two-Tailed Tests
4. t Test and t Distribution

05/17 – 05/21

***** Final Exam *** (in Canvas)**

*Unforeseen circumstances may necessitate changes in the course requirements and/or schedules.
Any changes will be announced in advance.*
