

# Statistical Analysis of Social Data

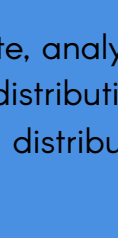
SOC 3630

Professor:

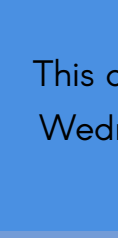


Dr. Michael Gillespie (he / him / his)  
Director of Faculty Development and Innovation  
Professor of Sociology

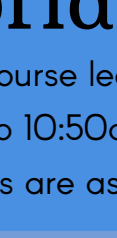
Contact Me



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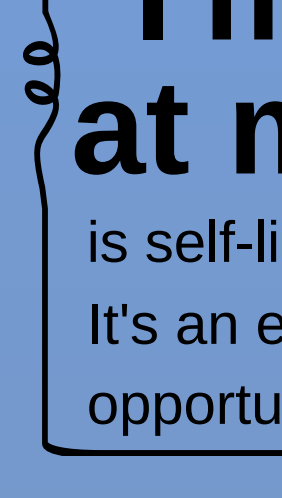
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## Course Description

This course is designed to introduce students to the methods that sociologists, social workers, criminologists, and other social scientists use to summarize and analyze relationships in numerical social data. Social scientists study the social world through responses to surveys, census demographic indicators, and rates and counts of social behavior (e.g., crime, unemployment, and welfare data). We also use similar data to study aggregate units of analysis such as nations, states, counties, and cities.

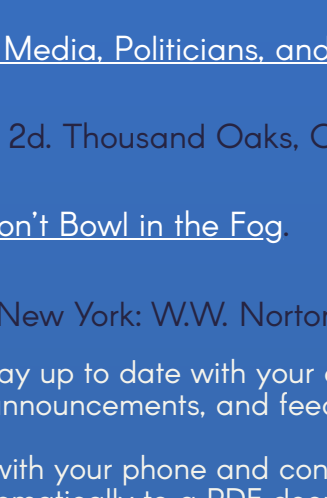
As a student in this course, you will create, analyze, and communicate common descriptive and inferential statistics including frequency distributions, graphical presentations of data, measures of central tendency and variation, sampling distributions, estimation procedures, and basic hypothesis tests in Microsoft Excel.

## Hybrid Design

This course utilizes a hybrid design: course lectures are delivered in-person on Monday, Wednesdays, and Fridays from 10a to 10:50a; no lectures will be recorded or available.

Lab and applied components are asynchronous and [available on D2L](#).

## Effort and Opportunity!

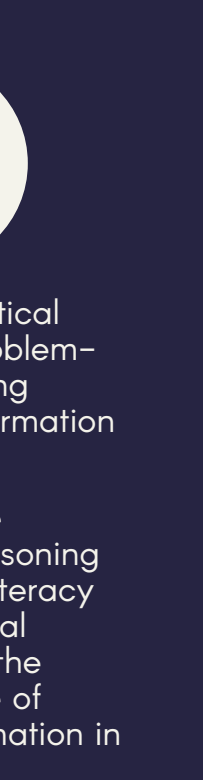


Attitude is everything! Saying that,

**"I'm not good at math!"**

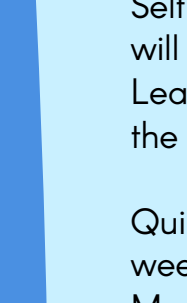
is self-limiting.

It's an excuse orientation not a opportunity orientation!

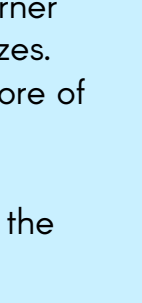


effort > ability

I have no doubt that you can and will be successful in this course as long as you focus on your best honest effort and not worry about your 'grade'. Bring an attitude of opportunity to this experience to learn, and you'll realize this is not a math class.



## Course Resources

[All linked in D2L](#)

Statistical Literacy Mobile App:

- I have developed a mobile app for this course to be used as a guide for key terms and concepts, links to course resources, polls, and other goodies.

Go to this link on your smart phone: <https://statliteracyglideapp.io/> or scan the QR code above.

Open Access Statistics Texts:

- Open Statistics Education: An Interactive Multimedia Course of Study ([online stat book.com](#))
- Introductory Statistics by ([OpenStax](#))

Other readings (linked in D2L):

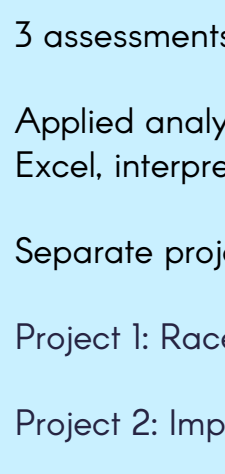
- Best, J. (2012). [Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists](#) (Updated ed). Berkeley, CA: University of California Press.
- Keller, D. K. [The Tao of Statistics: A Path to Understanding with No Math](#). 2d. Thousand Oaks, CA: Sage.
- Martinrogers, N., Rausch, E., & Mattessich, P. (2009). [Communities that Don't Bowl in the Fog](#). Contexts, 8(1), 26–31.
- Wheeler, C. (2013). [Naked Statistics: Stripping the Dread from the Data](#). New York: W.W. Norton.

I recommend the use of the Brightspace Pulse app for your mobile devices to stay up to date with your online materials, announcements, and feedback.

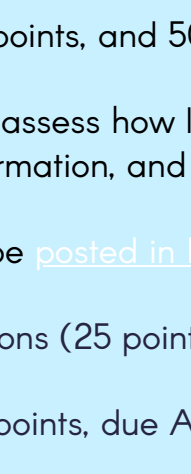
The Adobe Scan app allows for you to scan your hand-written work with your phone and convert it automatically to a PDF document.

## Course Learning Objectives

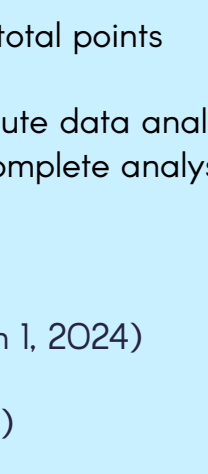
Through this course, students will be able to:



CO 1: Identify key concepts of descriptive statistics



CO 3: Execute computational skills using Excel to manage and analyze data



CO 5: Apply critical thinking and problem-solving skills using quantitative information

CO 2: Identify key concepts of inferential statistics

CO 4: Perform calculations of descriptive and inferential statistics with Excel

CO 6: Integrate quantitative reasoning and statistical literacy to apply a critical perspective on the widespread use of statistical information in society

## Learning Activities



### Student Self-Assessment Quizzes (CO 1, CO 2)

Weekly self-assessment activities in D2L  
14 assessments, 10 points each, 140 total points

Self-assessment is a key component to engaged learning! Each learner will be evaluated on their responses to weekly self-assessment quizzes. Learners will be allowed unlimited attempts to each quiz, but the score of the first attempt is recorded.

Quizzes will be posted each Friday at 11am, after the final lecture of the week, and will be expected to be completed by 10am the following Monday before the first lecture of the week.

Learners may use their course reading materials and notes to complete these assessments.

These self-assessments are timed – learners will have one hour to complete each assessment.

## Learning Activities



### Excel Exercises (CO 3, CO 4)

Activities to reproduce Excel data outcomes and perform statistical analyses  
10 Exercises, 15 points each, 150 total points

Learners will be assessed on their completion of a series of Excel exercises. These exercises are designed for students to compute statistical data and identify outcomes of their analyses. Learners will also use AI technology in some exercises to critical evaluate and incorporate these important tools.

To complete these exercises students will watch a video demonstration from the Excel Video Guidebook (on D2L), follow detailed directions in the exercise explainer document, produce the required output, and answer questions by entering data on an exercise quiz in D2L. Completed Excel workbooks will be submitted via the Dropbox on D2L.

Successful learners will produce Excel output, respond to data quizzes, and submit complete workbooks that meet the learning objectives of each exercise.

## Learning Activities



### Applied Analysis Projects (CO 5, CO 6)

Written projects incorporating, key concepts, data analysis, social science phenomena, and critical thinking

3 assessments, 25 points, 35 points, and 50 points; 110 total points

Applied analysis projects will assess how learners execute data analyses in Excel, interpret statistical information, and develop a complete analysis.

Separate project guides will be [posted in D2L](#).

Project 1: Race and Exonerations (25 points, due March 1, 2024)

Project 2: Implicit Biases (35 points, due April 12, 2024 )

Project 3: Student Anxiety and Mental Health (50 points, due May 1, 2024)

## Levels of Evaluation for Excel Exercises and Applied Analysis Projects

0 Incomplete Project is not submitted or submitted with substantial components missing

1 'Not Yet' Project is completed but requires more time and attention  
Required revision within 48 hours for partial points

2 'Developing' Project completed with some areas for growth  
Optional revision within 48 hours for partial points

3 'Understanding' Project completed and demonstrated a working understanding of the material  
Final submission

✓ =

✓ =

□ =

★

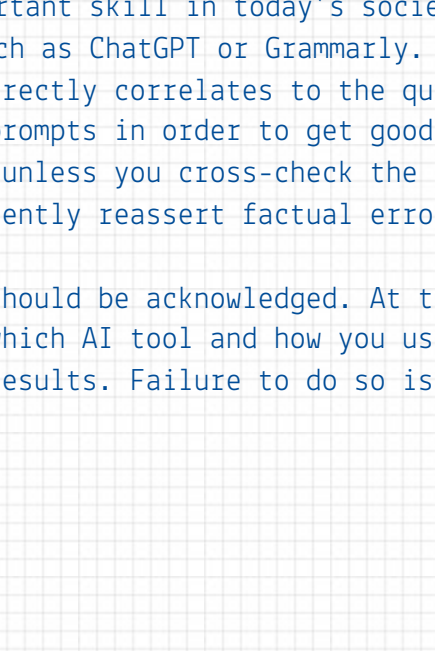
Tokens!

Life happens. It is a fact of life, really! Therefore, I grant each student 5 tokens that can be redeemed when, well, life happens.

Perhaps you will need them, but if you need an extra day for an Excel Exercise or Applied Analysis Project, or have to miss lecture, use a token.

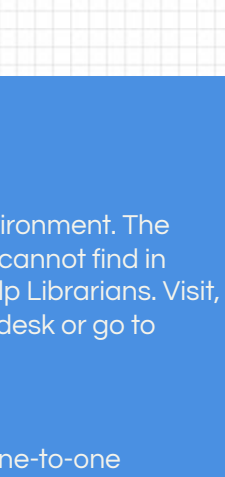
You still must complete the work, but if life happens, let me know **ahead of the due date** or the lecture period, and turn in a token. That's it.

## Distribution of Evaluation Points



I will take attendance each lecture period. If you have 5 or fewer absences throughout the semester, you have earned the "Course Engagement" badge.

The Course Engagement badge means that your lowest Excel Exercise grade will automatically dropped and you will be given all 15 points for the exercise.



## Units, Topics, and Dates

Unit 1  
Introduction  
January 8 - 12, 2024

Unit 2  
Basic Descriptive Statistics  
January 15 - 19, 2024

Unit 3  
Measures of Central Tendency  
January 22 - 26, 2024

Unit 4  
Measures of Variability  
January 29 - February 9, 2024

Unit 5  
The Normal Distribution  
February 12 - 23, 2024

Unit 6  
Samples, Sampling and Risk  
February 26 - March 8, 2024

Unit 7  
Hypothesis Testing  
March 11 - April 12, 2024

Unit 8  
Analysis of Variance  
April 15 - 19, 2024

Unit 9  
Real World Research  
April 22 - 26, 2024

## Student Performance Expectations

### BE DILIGENT

You are expected to work hard in this course and should expect to put in plenty of work time outside of the classroom.

### BE ENGAGED

Engagement is your continued and productive attendance, use of learning activities as opportunities to learn, and mindful participation in active learning.

### BE PROACTIVE

Statistics is not a subject that is learned without practice and help. Do not be afraid to ask for help or come see me during my student office hours – I am more than willing to go the extra mile, but only if you are, too.

### ASK. ASK. ASK.

Ask for help: There is NO SUCH THING AS A STUPID QUESTION!

## Important Information!

Academic Integrity:

Students are expected to maintain principles of academic integrity and conduct as defined in [EIU's Code of Conduct](#). Violations will be reported to the Office of Student Standards.

Students with accessibility and accommodation concerns:

If you are a student with a documented disability in need of accommodations to fully participate in this class, please contact the Office of Accessibility and Accommodations. All accommodations must be approved through OAAAS. Please follow this link for more information on how to be registered with their office. Please stop by McAfee Gym, Room 1272, or call 217-581-6583 to make an appointment. You may also email [accommodations@eiu.edu](mailto:accommodations@eiu.edu) for more information.

The Academic Success Center:

Students who are having difficulty achieving their academic goals are encouraged to contact the [Academic Success Center](#) for assistance with time management, test taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Academic Success Center provides individualized consultations. To make an appointment, call 217-581-6696, or go to McAfee Gym, Room 1336.

## Student Wellbeing!!!

EIU is committed to supporting and advancing the mental health and well-being of our students. Students may experience stressors that can impact both their academic experience and their personal mental health and well-being. These may include academic pressure and challenges associated with relationships, anxiety, depression, alcohol or other drugs, identities, and finances. If you are experiencing concerns, seeking help is a courageous thing to do for yourself and those who care about you. Below is a list of available campus resources to assist with student well-being:

• **EIU Counseling Clinic:** Human Services Building, 1st floor; 217-581-3413; for after-hours urgent support, call 1-866-567-2400. The Counseling Clinic offers individual and group counseling and emergency services.

• **Online Mental Health Screening:** online, private screening tool for depression, anxiety, eating disorders, and alcohol and substance misuse.

• **EIU Health Clinic:** Human Services Building, 1st floor; 217-581-3013. The Health Clinic services include lab work, pharmacy, and women's health and men's health programs.

• **Health Education Resource Center (HERC):** 2201 Blair Hall; 217-581-7786. The HERC offers health programming in the areas of alcohol, tobacco and other drug prevention and education, flu and cold prevention and education, nutritional analysis and education, and sexual health education, in addition to other health-related topics.

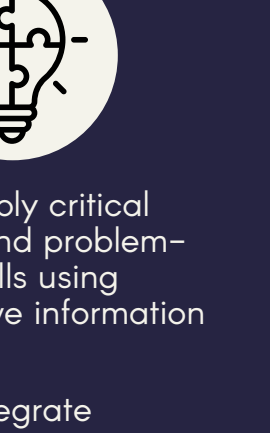
• **Center for Gender and Sexual Diversity (GSD):** Stevenson Hall, lower level; 217-581-7117. The GSD Center provides services such as the Trans\*formation Station, a large library full of books and movies, year-round programming, and comprehensive Safe Zone Training program.

• **EIU Campus Food Pantry:** 1347 McAfee. The EIU Campus Food Pantry is a means to support students and the campus community by alleviating barriers to consistent, adequate, and healthful food. Anyone with a Panther Card can visit the pantry two times per month.

• **Student Legal Service:** MLK Jr University Union Room 2420; 217-581-6054. Student Legal Service can assist with off-campus housing issues, traffic violations, misdemeanor criminal offenses, municipal ordinance violations, and expungement.

## AI - Artificial Intelligence

Using an AI-content generator such as ChatGPT or Grammarly to complete assignment without proper attribution violates academic integrity. By submitting assignments in this class, you pledge to affirm that they are your own work, and you attribute use of any tools and sources.



Learning to use AI responsibly and ethically is an important skill in today's society. Be aware of the limits of conversational, generative AI tools such as ChatGPT or Grammarly.

- Quality of your prompts: The quality of its output directly correlates to the quality of your input. Master "prompt engineering" by refining your prompts in order to get good outcomes.
- Fact-check all of the AI outputs. Assume it is wrong unless you cross-check the claims with reliable sources. The currently AI models will confidently reassert factual errors. You will be responsible for any errors or omissions.

- Full disclosure: Like any other tool, the use of AI should be acknowledged. At the end of your assignment, write a short paragraph to explain which AI tool and how you used it, if applicable. Include the prompts you used to get the results. Failure to do so is in violation of academic integrity policies.

Proper uses of AI in this course include:

- Fine tuning research questions
- Draft outlines of papers or projects
- Brainstorm and fine tune your ideas
- Check grammar, rigor, and writing style
- Consolidate and organize notes.

## More Good Stuff!

Booth Library  
The Center for Student Innovation (CSI) is located on the lower level of Booth Library, in the Atrium. Technology is available for checkout for students with a valid Panther Card. Items available include laptop computers, Wi-Fi hotspots, digital camera kits, webcams and speakers, and a sewing machine, all for limited checkout periods. Other items for use in the CSI (but not for checkout) include podcast equipment, 3D printers, a Cricut cutting machine, and virtual reality (VR) equipment.

Writing Center:  
I encourage you to use EIU's Writing Center located at 3110 Coleman Hall. This free service provides one-to-one conferences with writing center consultants who can help you with brainstorming, organizing, developing support, documenting your papers, and working with sentence-level concerns. The writing center is open to help any student from any major at any stage of their writing process, and its system of one-to-one conferences demonstrates value and respect for individual writers, all of whom can benefit from feedback about their works in progress. Visit <https://www.eiu.edu/writing/> for more information and hours of operation.

Technology Resources:  
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Contact the CSI by email at [csi@eiu.edu](mailto:csi@eiu.edu) or call 217-581-6073.

Technical Support Help for Students:  
Contact: EIU User Services Phone: 217-581-4357 Email: [support@eiu.edu](mailto:support@eiu.edu)  
D2L Brightspace Support (provided by D2L)  
Phone: 1-877-325-7778 (toll free) Email: [Click here](#) to submit an issue via email.  
Note: D2L provides support for USING D2L Brightspace only. For login and other issues, contact EIU User Services listed above.

[D2L Brightspace Tutorials for Students](#)