SOC 3630 – Statistical Analysis of Social Data
Spring 2018, Section 002, CRN: 30942
4 Credit Hours

Professor Michael D. Gillespie, Ph.D.
Blair Hall 2165: M/W/F: 10:00a–10:50a
Lab: 3013 Old Main; T: 2:00p-3:40p

Office of Statistical Literacy: 3139 Blair Hall
Office Hours: M/W/F: 8:00a-8:45a;
2:00p-3:00p

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"Fundamentally learning about the world through data is really, really cool."

— Hadley Wickham

COURSE DESCRIPTION AND OBJECTIVES:

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.

This course assumes that each student is – on the first day of class – anxious and ***not*** seeking to become a professional statistician. Rather, this course is designed to help sociology students develop a ***critical statistical literacy***. Fundamentally, you are here to learn ***how*** statistics are an essential, unavoidable part of our society (and with which you *must* come to some inner-peace).

People who acquire statistical literacy hold a key characteristic of citizenship. The media, politicians, advocates of social causes, and other groups combine social statistics with textual information to promote and/or justify some social action or cause. To become a critical consumer of statistics, each student will develop a working knowledge of how statistics are generated (computational and applied methods) as well as how "statistics" is a language to communicate certain, purposeful information, and a worldview through which human social relationships are *best* understood.

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.

Eastern Illinois University Learning Goals and Course Objectives:

Critical Thinking:

- Seeking and gathering data, information, and knowledge from experience, texts, graphics, and media (CT-2).
    - *Read and analyze statistical information produced by other social researchers*

- Understanding, interpreting, and critiquing relevant data, information, and knowledge (CT-3).
    - *Confront anxieties and fears of critically reading, writing, and thinking with numbers*

- Synthesizing and integrating data, information, and knowledge to infer and create new insight (CT-4).
    - *Improve critical thinking and problem solving skills using quantitative information*

Quantitative Reasoning:

- Performing basic calculations and measurements (QR-1).
    - *Confront anxieties and fears of generating and working with numbers*

- Applying quantitative methods and using the resulting evidence to solve problems (QR-2).
    - *Improve critical thinking and problem solving skills using quantitative information*

- Reading, interpreting, and constructing tables, graphs, charts, and other representations of quantitative material (QR-3).
    - *Develop competence in reading and using graphs and charts to summarize numerical data*

- Critically evaluating quantitative methodologies and data (QR-4).
    - *Develop competence in reading and using graphs and charts to summarize numerical data*

- Constructing cogent arguments utilizing quantitative material (QR-5).
    - *Develop competence in interpreting descriptive and inferential statistics*

- Using appropriate technology to collect, analyze, and produce quantitative materials (QR-6).
    - *Enhance computer skills by using SPSS to manage and analyze data*
    - *Develop competence in calculating descriptive and inferential statistics by hand and with SPSS*

Writing and Critical Reading:

- Creating documents appropriate for specific audiences, purposes, genres, disciplines, and professions (WRC-1).
    - *Develop communication and literacy of statistics in order to develop a critical perspective on the widespread use of statistical information in society*

- Crafting cogent and defensible applications, analyses, evaluations, and arguments about problems, ideas, and issues (WRC-2).
    - *Present research results in multiple ways (words, graphics, and tables)*
    - *Write about data and statistical test results in an appropriate manner*

REQUIRED TEXT:

Healey, Joseph F. 2016. *The Essentials of Statistics: A Tool for Social Research*. 4th ed. Boston, MA: Cengage.

Weekly Unit Essays: Content-specific readings posted on D2L.

"A Guide for Statistical Literacy: Technical Concepts and Applications" posted on the course D2L site

Required Reading Schedule

***The weekly reading assignment / schedule will be posted by the prior Wednesday on the course's D2L calendar*.**

Additional Applied Required Readings:

An applied reading taken from current media reports, or from a social or political institution, will be posted periodically for use in lecture and/or lab. They are not listed here because they are selected a week or two ahead of time to ensure they are timely and relevant.

COURSE CALENDAR:

The official course schedule and calendar is on Desire2Learn (D2L) and will be kept up-to-date.

You are responsible for continually checking the calendar for up-coming reading assignments, course announcements, and other information including additional required reading material.

ADDITIONAL REQUIRED ITEMS:

1. A Scientific Calculator (DO NOT USE A "GRAPHING" CALCULATOR)
    a. *Calculators are available during lecture; **no cell phones/smart phones are allowed to be used as calculators. You are responsible for having a calculator available for lab sessions.***

2. Access and use of SPSS
    SPSS is available in the Sociology/Anthropology Computer Lab as well as 3013 Old Main where our lab sessions are held. Campus public computing sites, such as Booth Library or Gregg Technology Center require a course Citrix Account to use SPSS, *which we do not have*. ***It is highly advised you complete all of your SPSS work during the lab period.***

3. Access and knowledge of Desire2Learn (D2L; EIU Online) is important for course announcements, lecture materials, lab and homework assignments, and grade feedback. Additional materials, if available, will be posted prior to each class session.

COURSE REQUIREMENTS: 750 TOTAL POINTS

Below is a list of the course assignments with total point values and due dates. Each item listed is required.

Graded Requirements:

Weekly Homework Lab Assignments (13 assignments, 50 points each, 650 total):

Each student will complete a series of lab assignments. Every assignment will be posted on D2L in Lab on each Thursday in Lab and is due the following Wednesday ***at the beginning of lecture at 10:00a – not at lab on Thursday***.

Midterm Exam (50 points): **REQUIRED**

The midterm exam will cover the **first FIVE units** and will be on **Wednesday March 7, 2018** during the normal class period. The midterm exam will be in two parts: an in-class section of multiple-choice and short answer questions, and a take-home portion of statistical computations and analyses. The take-home portion will be due on **Friday March 9, 2018** by 12:00 pm, in person in the Office of Statistical Literacy

Final Exam / Paper Option (50 points):

The final exam is **Tuesday, May 1, 2018 from 10:15 am-12:15pm**. Because statistics is a cumulative process, the final exam is cumulative as well. The final exam will be in two parts: an in-class section of multiple-choice and short answer questions, and a take-home portion of statistical computations and analyses. The take-home portion will be due on **Friday May 4, 2018 by 12:00pm** in the Office of Statistical Literacy.

OR

Analysis Paper (50 points):

To replace the final exam, a student may write an Analysis Paper that will result in a complete analysis of a specific research question using SPSS data. In order to be eligible for this option, *the student should receive a B or higher (40 points or more) on the Midterm Exam **and** have a 'B' average after the Midterm Exam is complete*. A student who wishes to write this paper rather than take the Final Exam **must** put their intentions in an email and send it to Prof. G by April 1, 2017. A detailed assignment guide will be posted on D2L after the Midterm**; Due by Tuesday, May 1, 2018 at 10:00am in the Office of Statistical Literacy.**

The B.O.S.S. (5-10 extra credit points)

The B.O.S.S. is the **B**oard **o**f **S**tatistical **S**ignificance, which is located just outside of the Office of Statistical Literacy. Twice during the semester, a challenging problem, question, or curiosity will be posted on the B.O.S.S. that, if accepted, each student has the opportunity to attempt for extra credit. When opportunities are posted, they will be announced in class.

*NOTE: **NO LATE ASSIGNMENTS WILL BE ACCEPTED**.*

Every effort should be made to turn in assignments on time. If you know that you will be absent the day an assignment is due, you must email or call my office prior to the start time of the class period (10:00a) and get approval of alternate arrangements to turn submit your assignment. Approval is **not** *guaranteed.*

Based on the requirements, there are 800 points to be earned in this course:

Requirement:	Points
Weekly Lab Assignments	650 Total points
Midterm Exam	50 points
Final Exam / Paper	50 points
Total	750 Total

Final letter grades are based on the following scale:

A (90% or higher)	675-750 points
B (80-89%)	600-674 points
C (70-79%)	525-599 points
D (60-69%)	450-524 points
F (less than 60%)	< 450 points

Be advised, this course is part of the sociology core, those courses required of students who major in sociology. Therefore, it is in your best interest to apply yourself and perform at the level necessary to ensure the grade requirements for the sociology core.

At any moment in the semester, you can gauge your progress in the course by tracking your grades on D2L. Take the total amount of points you have earned and divide it by the total amount of points possible to that point, your calculation will be your percentage. All attempts will be made to keep your grades up to date on D2L.

Grading FAQ:

Question: *Do you grade on a 'curve'?*

Answer: No. I grade on absolute points; a grading curve is simply grade inflation.

Question: *Can I earn extra credit?*

Answer: Any opportunities for extra credit will be afforded to all students in the course and at the discretion of the instructor.

THE IMPORTANCE OF LABS:

Each week's lab session is provided for you to learn and practice applying statistical methods, for using SPSS, and as time to work on your weekly lab assignment. The lab sessions, after a brief discussion, are an open time where you can work on your course work or other relevant course material. Lab sessions are an important, dedicated time where you as a student in statistics will have access to your professor, statistical software, and your peers in an effort contribute to your success in this course.

In order to be "dismissed" from each lab session, you will have to provide/show:

- All SPSS Output, properly formatted
- An indication of what information in the SPSS output you will use to analyze and interpret your results
- Any other questions / points as indicated on each lab assignment

We will not use SPSS during lecture; this is the point of the lab sessions. It is up to you to practice using the program. You will have to use it for your weekly assignments, as well as to complete the data analysis paper. Therefore it is in your best interest to keep up with the SPSS homework.

Like many other social research methods, statistics is often a collaborative process. Therefore you will be allowed to work alongside your classmates during lab sessions; **BUT** you will submit your own individual lab assignment. The completed assignment you submit as an individual, including textbook and SPSS analysis work, is expected to reflect your own individual effort.

OTHER EXPECTATIONS:

Class Attendance, Participation, and Policies:

You will sign-in each class-period. Learning statistics is not like other courses you have taken in your major. Rote memorization and cramming the night before the exam will **NOT** work in this class. Each part of the course systematically builds on all the material preceding it, so missing any part will put you behind for the remainder of the course. Also, the more practice you have working on problems the better. Attending class is very important to your success.

While attendance is ***not*** a part of the grade requirements for this course, if you have 5 or fewer absences from lecture, you will be eligible for Prof. G's rounding rule. You can also be excused from **one Lab Session**; if you miss more than one lab session, you will no longer be eligible for the rounding rule.

The rounding rule means that if you are within 1.5 percentage points of the next grade level you will receive the next highest grade (i.e. you have a 78.5% after the final exam, and hence a C, you will earn a B). Your committed attendance can only help your grade: being present to learn and practice the course material, and being possible eligibility for the rounding rule!

What is 'Class Participation'?

Class participation is analogous to class *engagement*. Engagement in this course is exercised through your continued productive contribution to the course –reading assignments are completed, assignments are finished and submitted on time, and you come to class ready to be engaged. Engagement in the course is both critical to your personal success and the success of the group.

If you are going to be absent from a class session and have a legitimate reason for missing class (emergency, illness, death, etc.), please *contact me by email or telephone prior to the start of class*. It is your responsibility to be accountable for your attendance and engagement in the class.

General Classroom Policy

In all of my classes, I strive to provide a positive and productive learning environment for students. It is important that we all act in a respectful manner toward each other and do not disturb the class. I ask your cooperation in observing the following rules:

- Arrive on time.
- Do not come and go during the class period. This is disrespectful and disruptive for me and your fellow students. If you must go to the restroom, do so quietly, causing as little disruption as possible.
- Observe the cell phone and lap top policy at all times (see below).
- Do not carry on side conversations with your neighbors.

*Cell Phone and Computer Policy***:**

If you bring your cell phone to class, please show respect for me and the other members of the class by either turning it off or setting it so that it does not make any noise. It is unacceptable to make or receive calls, or to text message while in the classroom. You will be asked to leave if you are using a cell phone while in class.

Should you be an EMT, police officer, or other professional "on call," please see me ASAP and set your phone to vibrate during class, and quietly leave the classroom to return any calls received. Failure to abide by this policy will result in your dismissal from the classroom.

I do not allow use of personal computers in class. If you do bring your PC to lecture, you will be required to put it away or to leave the classroom. If you must use a computer for academic purposes, you must bring appropriate documentation from the office of student services.

Help with course material:

Prof. G:

Office hours are provided for students to seek guidance and help with course content. Office hours are provided for the sole purpose of helping students and should be taken advantage of as needed.

SURVIVING STATISTICS:

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

The best rules to live by in this course are:

1. **Understand that you are going to work hard in this course and should expect to put in plenty of work time outside of the classroom.**
2. **Do the work – it is worth it.**
3. **Ask for help.**
4. **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 (http://www.eiu.edu/judicial/studentconductcode.php). Violations will be reported to the Office of Student Standards.

These policies include cheating, fabrication, falsification and forgery, multiple submissions, plagiarism, complicity to such acts, computer misuse, and classroom disruptions. Any breach of academic integrity will result in a failing grade.

You are responsible for your work, the quality of your work, and the validity of your work. Any violation of academic integrity is serious and, if founded, will result in a zero for the assignment. *Ignorance is not an excuse and will not prevent a failing grade*.

Students with disabilities:

If you are a student with a documented disability in need of accommodations to fully participate in this class, please contact the Office of Student Disability Services (OSDS). All accommodations must be approved through OSDS. Please stop by 9th Street Hall, Room 2006, or call 217-581-6583 to make an appointment.

The Student Success Center:

Students who are having difficulty achieving their academic goals are encouraged to contact the Student Success Center (www.eiu.edu/~success) for assistance with time management, test taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Student Success Center provides individualized consultations. To make an appointment, call 217-581-6696, or go to 9th Street Hall, Room 1302.

Booth Library:

Located in the center of campus, Booth Library is the best place to do research, find expert help, or study in a calm, distraction-free environment. In addition to the many print resources, Booth provides access to high quality e-books, journals and scholarship not freely available on the Web. Stop by the Reference Desk or go to http://library.eiu.edu to explore library resources. Get expert help with your research by contacting the Booth Library reference librarians. Visit, call 581-6072, or go to http://booth.eiu.edu/ask to connect with a librarian.

DISCLAIMER

The course content and this syllabus are subject to change at any time to allow for a flexible and open learning environment.